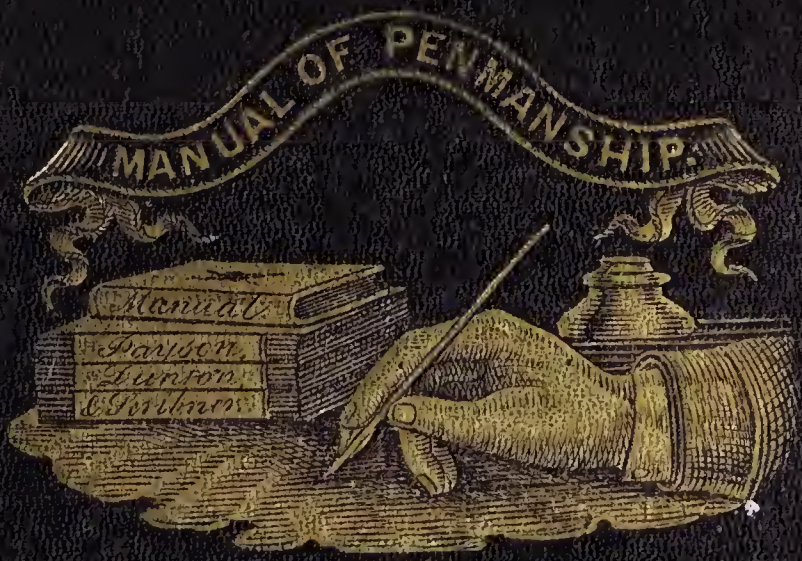
MANUAL OF PENMANSHIP.
Manual
Payson
Dunton
& Scribner

Alfred Bayliss.

June 4, 1900.

94 Bedford St.

New Bedford

Massachusetts.

Position of Hand and Pen.

See 53 page, Chapter 5.

A. *Place the end of holder against the side of middle finger just below the nail.*

B. *Place holder across first finger between second and third joints.*

C. *Place end of thumb near the right corner of nail against holder opposite first joint of middle finger.*

D. *The Rolling Rest of arm on the muscle in front of the elbow.*

E. *The Sliding Rest on corners of the nails of the third and fourth fingers bent under.*

F. *Wrist and hand must not rest on the desk or book.*

Published by Ivesly & Vickels, 117 Washington St. Boston

THEORY AND ART

OF

PENMANSHIP:

A

MANUAL FOR TEACHERS,

CONTAINING A FULL STATEMENT OF

PAYSON, DUNTON, AND SCRIBNER'S

CELEBRATED METHOD OF TEACHING;

INCLUDING CLASS-DRILL, WRITING IN CONCERT, CRITICISM AND CORRECTION OF ERRORS, HINTS TOWARDS AWAKENING INTEREST, ETC.

TOGETHER WITH

A COMPLETE ANALYSIS AND SYNTHESIS OF SCRIPT LETTERS,

AS DEVELOPED IN THEIR SERIES OF WRITING-BOOKS.

FIFTH EDITION.

BOSTON:
WOOLWORTH, AINSWORTH & CO.
NEW YORK: A. S. BARNES & CO.
1869.

PREFACE

TO THE SECOND EDITION.

THE first edition having been exhausted, an opportunity is afforded us of adding one or two particulars. One of the most eminent teachers in the city of New York has called our attention to the matter of *seats*. In some schools they are placed on the left of the pupil's side of the desk. This renders them very inconvenient when the right side of the body to the desk is preferred; the only remedy seems to be to change them. If the seats are placed exactly in the middle of each pupil's desk, they will be found convenient for any position of the body which may be selected. It would further be a great boon, if some one would invent a seat the height of which should be *adjustable* by some simple mechanism. We cannot insure equality of corporeal longitude with mental attainments, therefore seats which could be raised or lowered at pleasure would be a great convenience generally; for the writing-lesson they would be invaluable.

As to the "false cover," we omitted to state, that it is desirable to place the pages under it, when the book is folded at the back, to bring the right page

nearer the front of the desk. The page which would otherwise be placed on the desk is thus kept clean.

A valuable drill for the Capitals has been added on page 148. On page 103 will be found fuller directions for counting.

We desire once more to urge the immense importance of constant self-criticism on the part of the pupils, and immediate effort to correct the errors discovered. This alone will insure improvement. Only let this habit be formed, and the teacher's work may be considered ended. We desire also to direct attention to the Lessons in Part II. They are very important for a thorough comprehension of our method.

We have just made a very valuable addition to our system. It consists of a series of Chirographic Tablets, which are fac-similes of the Principles and Letters, thoroughly analyzed, as written of large size on the blackboard, containing besides useful Exercises for drill on the Capitals. By this means, the Teacher will be enabled to place perfect models before the whole class.

In conclusion, we cannot but express the hope, that, seeking thus in every respect to meet the wants of teachers from the resources of our combined experience, covering a period of more than *thirty years*, we shall continue to maintain the unparalleled popularity of our system, and to merit the continued expression of approval contained in such testimonials as these. "My pupils now *wri-*

come the hour for writing, and it is no longer a weary exercise. I can most heartily recommend the system and series of books." Again: "I think I can truly state that this system is the most philosophic ever used in my school in the past twenty-five years." From the Principal of one of the largest public schools in New York city: "A very remarkable improvement has taken place in the writing of *every individual* of the class." From a member of the Board of Education in Brooklyn: "To me, whose school-boy days have long since passed away, the specimens on exhibition this day show an improvement almost too wonderful for belief, and testify, in stronger language than I can use, in favor of this system and method of instruction." From the City Superintendent of Brooklyn: "This system is practised in several of the schools with astonishing results. I have never seen finer specimens of improvement in the best writing academies or private seminaries."

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INTRODUCTION.

In this little book we have aimed to supply a want that has long been felt. There have been many publications on the same subject, but they have been too abstract and theoretical. Our aim has been to state the results of our long and combined experience in such a form as should place the general teacher, who pleases to study them, in the position, so far as knowledge is concerned, of one who has made instruction in penmanship his specialty.

From this aim certain peculiarities have resulted, which we state in order to avoid misapprehension. The book will be found to consist of two parts. The first contains direct instruction to the teacher. In it we have sought to give such information as should furnish him with matter to bring before his class, directions as to the best method of teaching, the order in which the course should proceed, and cautions as to those general faults which will tend to make his labors futile. In doing this, we have endeavored rather to put it in such a shape as shall be convenient for presentation directly to the class, than in that

which is due to the acquirements and mental culture of the teacher. In a word, we have tried to put it in teaching shape. It is instruction for a class with their immature minds, instead of that proper for the teacher with his mature mind, but which, given in that form, he would have to think into the teaching shape for himself. Hence has arisen the occurrence of occasional repetitions, because we wished to make the different chapters — as so many separate divisions of the subject, which were to be brought before a class at intervals — complete in themselves.

The second part consists of lessons before a class. It presents specimens of our method of teaching each of the different branches of the subject. They are intended as models of systematized and thorough instruction.

We must apologize for any dogmatism which may appear in our pages. May it be excused in consideration of our earnestness, and in the recollection that the adoption of our recommendations depends solely on the reader's option. From unavoidable circumstances, our time for the preparation of this Manual has been limited. We have not been able, therefore, to give that attention to the graces of style which the culture of those to whom it is addressed rightfully demanded. In this respect we deprecate criticism, while to its ordeal we cheerfully submit the matter of our unpretending labors. Many very interesting topics have been passed by: we have paused to write no eulogies of this noble art; we have entered into no controversies with rivals, uninteresting to the reader and unprofitable

to ourselves; we have sought simply to make a plain, practical book We only ask that what we have suggested may be submitted to the test of experiment, and unless the material operated on be of far more stubborn kind than any we have ever encountered, we are satisfied to abide the result.

We have subjoined schedules of topics and summaries wherever we thought it would be convenient, and illustrative plates will be found pp. 56, 64. We would throw out the idea that it might be advantageous to make this little Manual a class-book. It is especially well adapted to what is termed the sub-lecture method.

The Table of Contents will, we trust, render reference to any point desired easy.

This is perhaps the most convenient place for the description of our Series of Copy-Books, to which this Course of Instruction is more particularly adapted. At its close we give the numbers of the books, in the order best calculated to promote the progress of the two divisions, boys and girls.

Of our Series, it may not be improper to add, that since its first publication, as the pioneer in printing lithographed copies on dry paper, a process we have carried to its present perfection at a very heavy expense, it has been subjected to numerous revisions, embodying the results of the combined experience of its authors, the suggestions of practical teachers, and the conclusions of scientific thought, together with such modifications as became ne-

cessary from the gradual advance in public taste. We trust that we shall not be deemed presumptuous, or passing the bounds of a becoming modesty in claiming that our system is a living growth. To say this is but an act of justice to the many thousands who have perfected or are now acquiring their penmanship from its pages. Still at its root, however, lies, as its principle of life, that determined preservation of simple forms in the elementary numbers which drew from that celebrated educator, the Hon. Horace Mann, the flattering approval: "This is the first common-sense system I have ever seen."

DESCRIPTION OF OUR SERIES.

Book 1. Primary. Coarse Hand. First four Principles. Short letters, separate. To be written by the Finger Movement.

Book 2. First four Principles. Groups of similar Principles and Letters, and of selected Letters. For Fore-arm and Finger Movements.

Book 3. All the Principles. All the Letters, both Small and Capitals. Easy words beginning with Capitals. The ten numerals.

Book 4. Review of No. 3. The same Capitals three times in combination with words, five on a page.

Book 5. Longer words with Capitals, four on a page. Some current forms of Capitals are introduced.

Book 6. Sentences, mostly Proverbs. Condensed Style.

Book 7. Mercantile Forms. Current Business Hand.

Book 8. Ladies' Book, fine hand, four words on a page.

Book 9. Ladies' Book, fine hand, sentences.

Book 10. Sentences, very bold hand.

Book 11. Sentences. Hand same size as No. 5. Numerous Capitals. Style free.

Book 12. A collection of the handsomest current Capitals, with words.

Course for Boys, 1, 2, 3, 4, 5, 6, 10, 11, 12, 7.

Course for Girls, 1, 2, 3, 4, 8, 9.

We now commit our little venture to the chances of the voyage. Its mission is one of good-will. Whether welcomed to friendly harbors or rudely handled in its onward course, its motive-power will ever be the same, a sincere desire to aid our fellow-teachers in one department of their arduous and toilsome work.

PART I.

INSTRUCTION.

PART I.

INSTRUCTION.

CHAPTER I.

GENERAL CONSIDERATIONS.

What may reasonably be expected from the school course of writing?

This is a very important question for superintendents, teachers, parents, and pupils. To arrive at a fair answer, we must consider the writing itself, the agents who are to produce it, their state of cultivation when they commence, the time devoted to it periodically, and the length of time through which the course extends.

First, then, as to the writing itself. What is it? It consists of a variety of complex forms from sixty to seventy in number; for, while there are fifty-two letters, some variations arise from the necessities of combination. These forms are small and delicate, are to be written with the same slope, of unvarying size, on a straight line, by means of two sharp points, the extremities of springs, which are guided by the hand and fingers holding a slender stick to which the pen is attached; these points are filled with a black fluid, which leaves a permanent trace wherever the points move on the paper, and they are to describe lines of two kinds, light as touch can make them, or shaded by moderate and nicely graduated pressure. The letters are required to be handsomely formed, free and bold, legible, and

written with rapidity. Here is evidently a tolerably difficult task to be performed. From these considerations it appears, that, in order to write well, two things are necessary, knowledge of form, and command of the pen, or facility of execution.

Let us turn now to the agents. Suppose a class assembled to take their first lesson in penmanship. They are usually, we suppose, about ten years of age. It is five hundred chances to one, thanks to our present system of primary instruction, that they know anything of form, not even what a straight line is; and that they have never learned to appreciate a form in order to transfer its likeness to slate or paper. In a word, mind, eye, and hand are alike untrained. Well, at least there are no bad habits to unlearn. Granted, except it be a "villainous" style of holding a slate pencil about one inch and a half long. We have otherwise virgin soil to work on.

Now call to mind what writing is as we have just described it, — that variety, delicacy, boldness, and accuracy of form required. It will surely be admitted that there is some work to be done. Look a little more closely. Consider those perceptive faculties undisciplined, those eyes untaught to observe, those arms and hands with muscles not yet trained to follow the mind's dictates. All that is required can be done by patience, diligence, and attention, but it will not be done in an hour, — neither, perhaps, very soon in three half-hours per week. A great many of these children will not have more than two years at school. A great many will be present in winter only, absent throughout the summer. A great many of those who remain at school longer and continuously, will have such a multiplicity of studies that very little time will be given to writing. What then may be reasonably expected from the

school course of penmanship? Certainly not a finished business hand. That can only be attained by very considerable practice. What may reasonably be expected is, that such a foundation should be laid as shall place the desideratum within reach of all who are willing to give the necessary practice to it afterwards. The mind and eye ought to be trained to the appreciation and distinct perception of the form of the letters, and the muscles should be in some degree trained to obedience to the mind in constructing those forms on paper. In the majority of cases a formal style — what is called a school-boy's hand — is all that can be hoped for.

Another question of equal importance now arises.

Which should be taught first, — knowledge of form, or command of the pen?

Some teachers have given preference to the one, some to the other. We think they should advance together. We give at first, in our copy-books, the simplest forms, uncombined, of such a size as to be susceptible of criticism by the yet untutored mind and eye, and yet not beyond the scope of a child's hand to execute. We require them to be written by the finger movement only, which is the easiest, and makes the fewest demands on the attention, which can thus be more entirely directed to the forms. But whilst we are satisfied, from our long experience, that this is the best method, to present it fairly we must describe it a little more fully. We will suppose the preliminaries gone through of position, pen-holding, placing of book, &c., which will be found described in another place, and that the pupils are ready to write. Now is the time for the first lesson in Form. At the blackboard is the place to teach it. We place the form to be written there. We make it large,

dwell on its parts, notice where it begins, where it ends, its length, its slope, its thickness. We compare it with other forms, show faults that are likely to occur, and require the pupils to criticise them. By every possible means do we strive to impress the form upon their minds. We next direct them to this form in their copy-books, and require them to tell us from that all the particulars we have given them. This is our first step to train the mind to the perception, and the eye to the judgment, of form. We proceed immediately to execution. Placed in the proper position, pen rightly held, &c., we require them to trace the copy with dry pens, ordering their movements by counting. This is continued whilst we watch their position and their movements. Their own attention to the instruction received is undisturbed by any dark record of their transgressions, since their pens as yet leave no traces of their course, and the pupils acquire some little control of their muscles, command of their pens, and courage for the coming event. What next? They are furnished with waste paper, ruled like the copy: a book of the same kind, divided through the back, and given out a page at a time, is very convenient. On this they make their first formal essay with ink. The same deliberate movement by counting is enforced. They write about four lines down a column, when a halt is called, for examination. Now, there has been this great advantage in using the waste paper: the pupils have been relieved of all nervousness, — remember those indispensable muscles are solely controlled by nerves; they have felt no anxiety about spoiling that nice, new, clean copy-book, with the handsome copies, which is to fulfil the old adage, *Litera scripta manet.* The faults are again displayed on the blackboard, criticised by the pupils, and the form impressed anew on their minds.

If the success has not been very great, a little more tracing may be desirable; then a few more lines on the waste paper, criticism, &c., as before. They are at length prepared to write in their copy-books; but, though the attaining of this privilege has been a great stimulus to their previous endeavors, there is no novelty about it now to disturb their nerves from fear of failure in an untried enterprise; on the contrary, it is quite an old story. They want their books to look well, so they are going to do their best; but they are not at all nervous, — they *know what they can do.* If ten or a dozen lessons have been occupied as above, the time has been well spent; the copy-books may not have many pages filled, but the pupils have not been idle. Such, in brief, is our method, — form first, then execution, but yet so continually interchanged that attainment in both advances simultaneously. We do not allow the writing to be too slow, or the form to be sacrificed to the speed. We say this in opposition to those who, on the one hand, advocate form without any regard to time, and those who, on the other hand, urge rapidity of movement, to the almost utter neglect of form. All handicrafts seem to support our view. Tools are used slowly at first, more rapidly as their use is better understood. What sort of proof would a tyro at the printing-case present, who should set his type as fast as an experienced hand? We are satisfied that ours is the true method of teaching writing, — care to get the correct form first; next, deliberate execution; finally, speed and freedom may be expected.

Can a bad writer teach penmanship successfully?

This is another important question. We answer, unhesitatingly, Yes. We believe that any teacher who will faithfully study this Manual, and carry out its plans, will

certainly succeed. Especially can he do so, now that, by means of a set of Tablets made to accompany the Manual, which we have just published, he can at all times suspend before his class a perfect representation of whatever requires explanation. The principles, letters, and exercises on these Tablets are fac-similes of large-sized blackboard writing. Being perfect in form and proportions, the pupils will have constantly before them a true model for analysis and criticism. When the Teacher has by these means shown the class what must be done, he has only to write upon the blackboard such errors and mistakes as he may discover in his examination of the scholars' writing in the copy-books. By continually pointing out these errors, and comparing them with the printed model suspended above, he will be enabled to teach as thoroughly and successfully as the most experienced instructor.

The reason that we have so few good writers in our schools is, that penmanship is not taught elaborately and thoroughly; a few criticisms are made, perhaps, when the copy is finished, but it is then too late, the mischief is already done. It should be borne in mind, that the great point is to make the pupil really see the copy, to transfer the forms there to mental vision, so that he can actually see them on the paper to write over. Teachers have also been left without that information which the writing-master acquires by experience in his specialty. This want we hope the Manual and Tablets will supply.

CHAPTER II.

REQUISITES.

What things are required for an exercise in writing?

Copies, teaching, paper, pens, ink, pen-wipers, blotters.

Everything, too, should be good, — good copies, good teaching, good paper, good pens, good ink. Drawing cannot be taught upon writing-paper, or shading with a treble-H pencil. An artist would make little progress with a box of sixpenny paints. Even in map-drawing it pays well to buy three or four of the best colors instead of a few cheap ones. If we make up our minds to teach writing, we must consider the necessary requirements. Are we not in this branch of education engaged in developing the æsthetic faculty, and training it to a due appreciation of form and beauty, which the hand is to be taught to produce? And shall we by a niggardly parsimony render such production impossible, and quench all enthusiasm in the pupil, by depriving him of satisfaction with his work? Consider only how delicate that work is, and there can be no further question about the necessity for the best instruments and materials with which to accomplish it. What are they?

1. *Good copies.* Our idea of a good copy is that the letters should be of elegant form, and constructed on natural principles. Every letter should be as perfect as it is possible for human skill to execute, that wherever it occurs it may present an unvarying model to the pupil. The turns and slopes should be alike, the loops of the same

length and width, the proper distances between the letters carefully observed, and shade duly distributed. The neglect of these points in the copy cannot fail of producing carelessness in respect to them on the part of the pupil. If they are not important in the copy, he will naturally argue that they cannot be important for him; and that accuraey and severity of eoneeption and exeeution which are so neeessary for the discipline of his mind will be altogether wanting.

We are not unaware of the idea entertained by some, that inaeeuraey in the copies, since it makes them approximate more nearly to the general style of writing, is therefore preferable. But what would be their opinion, if they wished to learn drawing, and the teacher placed before them for imitation studies in which lines which should have been straight were crooked, perpendieulars tumbling down, perspeetive not observed, and the rules he had given for their guidanee everywhere neglceted? Would they feel altogether satisfied at his accompanying polite remark, that he gave them a pattern inaecurate in many particulars, that they might find it more easy of imitation? Change of eireumstances sometimes begets ehange of ideas. We think it would be so in this case. Supposing them to venture a meek remonstranee, would they find further satisfaetion in being assured that the pictures of many inferior artists were very commonly disfigured by such faults. Their reply as sensible persons might not unreasonably be, that they would be willing to waive for a time the satisfaetion of attaining to the excellence of the pattern, for the more important considerations of knowing what was really right, and impressing a faultless standard on their minds. Is not this a perfeet parallel to the case supposed, and a complete refutation of the idea that imperfect copies

in teaching writing are desirable? It applies equally to the opinion held by some, that written copies are better than copies engraved. We have heard it gravely asserted, that the pupils make more rapid progress by such a course of instruction. Now what is this but to state, that pupils attain the excellence of a lower standard sooner than that of a higher one? A fact that certainly no one will be found bold enough to dispute. But it might, we think, be not unfairly asked, whether the pupils were not by this means receiving the impression of imperfect and constantly varying forms on their minds, whether their conceptions would not thus run the risk of being rather vague and indefinite, and consequently whether this was after all the best method of instruction. We have said nothing of the complete change resulting when the teacher is changed, nor of the impossibility of any accurate analysis, considerations which are not without their weight. We think the matter requires no further elucidation. Both views are fallacies. It is satisfactory to think that they are not popular.

To resume our consideration of good copies, the forms used should be through a considerable part of the course of the utmost simplicity, that the attention of the pupil may not be distracted from essentials, that he may be able to produce a handsome book from the outset, and, if we may be allowed to add it, receive his earliest impressions in favor of a plain, substantial hand. Curlicues, flourishes, and ornamental capitals, may delight an amateur in a showcase; a thorough business man detests them in his correspondence.

The course of instruction given in the copies should constitute a system, arranged in that order of progression which is indicated by a careful analysis of the forms of the

letters and of the powers of the human hand, so that each advance may prepare the way for the next, and the steps not be farther apart than the necessities of the case compel. To this end, the simpler forms should precede the more complex; the short, the long. Those that have similar curves and turns and identical parts should be together. Words should precede sentences. The columns should be first narrow, then broader, to accustom the hand by degrees to move easily on the given rests across the longest word. These columnar sections, intended to be written down, are the gradual preparation for the sentences, which occupy the width of the page. The selection of the words for the columns should be in accordance with the same principle of progressiveness, — first the easier, then the more difficult combinations. In them the loops should so occur that when the copy is written they may be handsomely distributed, and the general appearance of the page be harmonious. If it is objected that such an arbitrary arrangement is valueless, because in our general writing it does not obtain, we reply that there is a distinct object to be kept in view in teaching penmanship, which is to awaken and discipline the perception of beauty in the pupil's mind, and to excite and quicken his love of it. Then in records and correspondence he will do the best that the case allows. His copy-book is an exhibition of his progress: why should any source of beauty be neglected in it? As a general rule, the greater the satisfaction with the progress made, the more earnest the endeavor after higher attainment. Discouragement has blighted the growth of many a promising mind.

2. *Good teaching.* A standard of form being furnished in the good copies, good teaching is next requisite to bring out their highest availability. The pupil will look at those

forms, but he will not see them. There is great difference between looking and seeing. To test this, draw an irregular figure on the board contained by seven or eight straight lines, bid a class look at it attentively, without telling them what you wish them to do afterwards. Then cover it, and bid them draw one like it on the board or on their slates. How many do you think will have even the right number of lines, much more their right positions? Try it. The good teacher will not leave a form till they all *see* it, and can describe it minutely. The next point for which a good teacher is required is for the correct representation of what should now be the mental conception of that form on paper. To this end, he instructs in position, pen-holding, rests, and movements, and takes care that his instructions are obeyed. He handles his class as a good officer does a regiment, — the whole are drilled to act as a unit. He so furnishes his own mind that his pupils rely on his judgment, and are ready cheerfully to write in the number, or practise on the copy, he selects. Last, not least, his motto is, "Always one thing at a time." While thus faithfully performing his duties as a good teacher, he is not annoyed by his pupils constantly discovering in their copies a want of conformity to the standard given by rules and analysis; for, under skilled and faithful teaching, their critical powers soon become wonderfully acute. They have no occasion for saying, "Our teacher is too fussy about little things. He said the stem of the *q* was to be three spaces; and here in the copy, in one place, it is three and a half, and, in another, a whole space short. I guess Mr. Scribbler, the author of this famous Scribblerian system, knows how to write about as well as our teacher. It evidently isn't worth while to take so much trouble about all these little things. The

main point is freedom." And thus the young reasoner is tempted to run before he can walk, and, from the natural consequences of such proceedure, to get a *crippled hand* for the rest of his life.

3. *Good paper.* Here we begin to tread on delicate ground. The pocket is touched. Good paper cannot be put into books at the same price as bad. Where there is so much competition as in copy-books, you may rest assured that, whatever may be the quality of the specimens shown, no one can much undersell his competitors without supplying an inferior article. Prices at present, owing to strong competition, are so low, that lower would yield no profit, and therefore, believers, as we may be, in the self-denying devotedness of humanity in this nineteenth century, we think it a little too tough for credence, that a business man will supply a school or city with books at a loss, for the mere pleasure afforded by such a generous act, — favored individual as the teacher or city so supplied may suppose itself to be. At a lower price, the article must be inferior. Now, if the inferior article is satisfactory because of its price, well and good. All we would caution you against is the idea that a good article in this line can be had as cheap as a bad one, and against those dishonest persons who exhibit a paper of the same quality as their neighbor's, and, obtaining an order by the lowness of their rates, proceed immediately to fill it with that which is very inferior.

A good paper costs more, but it is indispensable. It should be tolerably thick, well laid, with a smooth surface, moderately glazed; so that the ink will not show through when dry, and that there may be no roughnesses nor little hairs for the pen to pick up, and that the pen may glide along without jar on the muscles or nerves of the fin-

gers and hand, — a very important consideration now that steel pens are used, as paralysis has in several instances resulted from their use, and their injurious effect must needs be greater on a rough surface. A white paper is generally to be preferred to a blue, indeed is almost invariably used. What is our plea for the use of such a paper as we have described? The encouragement it gives to both teacher and pupil to be able to produce handsome work. How can they go on with any heart, when the copy on one side of a leaf is blurred by that on the other; when it is impossible to make a fine hair-line or a clean cut shade; when the pen is continually "picking up sticks"; when unglazed spots, anything but oases, for they are as absorbent as sand itself, are found every here and there; when the very whiteness of the page is a whity-brown? With such paper little enthusiasm can be expected. But give them a book with handsome copies and good paper, see how their eyes glisten as they pass their hands over the page, — a pleasure, by the way, in which it is not well to indulge very often, — and it requires but a superficial judge of the human heart to read their thought, "This is a good book, — we must put good writing into it, and no blots." Good paper, therefore, pays in the end. It also makes a considerable difference in the wear of pens.

4. *Good pens.* Very little need be said on this point. The pen should be fine-pointed, so that a good hair-line can be made, and have a good springy nib, that the shades may be cleanly cut, and that the writing may not be rendered stiff, a result inevitably following the use of a "hard" pen. They should be of a uniform character as much as possible, — not one very hard and another very soft. Slight differences cannot be avoided; those that vary least are the best, if they are right in other respects. We have

found no pen equal to Gillott's 303. Other pens we know can be bought cheaper. But his are very durable, and it is a question worthy the consideration of a debating-society, "Which is preferable, three poor pens for a penny, or one good one for the same price, which alone will last as long as the three together?" Many, perhaps, without debate, would declare in favor of the good one, notwithstanding its singularity.

A new pen is often greasy, owing to a certain process in the manufacture, and will not retain the ink. Dip it and raise it from the ink slowly, then wipe it; repeat this two or three times and the trouble will be removed.

5. *Good ink.* This is a very difficult thing to procure. It should be sufficiently fluid to flow easily from the pen, dark enough to enable the pupil to see at the time what he is writing, and to judge of hair-strokes and shades. It must not evaporate rapidly from the inkstand, nor leave a layer of mud in it; neither should it mould. Frost should not affect it. Some inks, when frozen, an accident which will happen occasionally in country schools, are completely spoilt. No chemical analysis ever more completely separated solid from fluid, leaving them in a state never more to be usefully reunited. In instances which have come under our notice, one might as well attempt to write with charcoal and water. Does any one question why the latter mixture would not answer? The reply is simple, the black would rub off or wash out. Ink should stain the paper in order to be permanent. Its color when thoroughly dry should be a deep black, which neither time nor exposure to the sun can change.

The teacher will find it necessary to give attention to keeping the ink in good order. If it becomes too thick, a little soft water may be added by means of a sponge, and

the ink stirred up, only taking care not to make it too pale. Pupils often complain of their pens, when the real fault is in the ink or the paper.

Teach them how to take ink. Let them learn by experiment, that, if they raise the pen from the ink suddenly, it will be too full, and apt to blot; if very slowly, the attraction of the fluid will leave none in the pen; and, therefore, a moderate motion must be used. One experiment is worth hours of talking. Attention to this will save many a blot.

6. *Pen-wipers.* Cleanliness is as absolutely necessary for the well-being of the pen, as for our own. The applying things to their right uses is a habit as important for the child as for the man. Not being acquainted, however, with the physiological value of hair, the youth is apt to regard the covering of his pericranium, indifferent to the oil with which nature has supplied it, even when he has not made artificial additions, as a most convenient pen-wiper, possessing the inestimable property of never being mislaid. When this use of it is forbidden, the pen is very apt to find its way into his mouth, an instrument certainly most admirably adapted, from its internal arrangements, to the end he has in view; but there are several objections in addition to this slight one, that the best inks are poisonous, and so little agreeable generally to the taste, that the emptying of the mouth becomes immediately necessary, and spittoons are not always handy. Parts of the garments are the next resource: if they were always dark-colored and of cloth, they might answer very well; but, the habit once being formed, a rather unsightly mark may be placed upon the light colors of summer wear. It seems, therefore, desirable to have something specially set apart for this use. Two or three different-sized circles of dark

cloth, cut from some old garment, with a small mother-of pearl button sewed on the top, through the centre, makes a cheap and suitable pen-wiper. Each pupil should be required to bring one, or something of the same kind. It should be mentioned that they are to go into a common stock, and that, since to insure their presence at the exercise, and to keep them free from grease, they will be collected, there will not be time when they are given out to select his own for each pupil. There will be no dissatisfaction at this arrangement, if it is understood beforehand. Otherwise, some might bring very handsome ones, and feel annoyed that they should receive in the distribution shabby ones instead. They should be also encouraged to have another for private use, distinctly marked, which can be kept in their desks. The pen-wipers may be collected and distributed as directed in the chapter on Drill. They should be used whenever the pens are laid down for instruction, or once in the middle of the time of writing, if there is no interruption. Of course, the pens should be carefully cleaned at the close of the exercise. Always dip and wipe a new pen two or three times before it is written with, or it will be very likely to make a blot. To avoid the same mishap, the pen should never be wiped on the outside of the pen-wiper, but always between the leaves of it. Should the pen-wiper then happen to get on the book, no damage will be done.

7. *Blotters.* A stiff one will last the longest, and is very cheap, but common blotting-paper, or a piece of white paper or any paper, will answer, not indeed for blotting, but for the use we now designate. The copy-book must be kept perfectly clean, and the blotter is to be used for that purpose. The right hand does not soil the book, for it rests on the nails of two fingers and only touches the

page with them. It is the left hand that does the mischief. To obviate it, place the blotter so as to cover each column as soon as it is dry after being written, and rest the left hand on that, and not on the page. Do not use it to absorb the ink, it is apt to spoil the appearance. Let the same side always be on the page, so that the grease it derives from the hand may not be transferred to the book. Let the pupils understand the reasons, and that there is a natural greasiness in perspiration, which renders soap ne cessary in washing, to neutralize it by its excess of alkali. Caution them against placing their hands on any paper to be written on, as the grease will repel the ink, and the pen will not mark. When this is the case, they always blame the pen, but it is caused by their own fault.

8. *Covers.* Every book should have a cover. Toler ably stiff brown or white paper is the best, but have all alike. Since there is no thickness to the cover or back of the copy-book, it is a very easy matter to put on the protecting cover neatly. Take the piece of paper to be used and double it, so that the crease may be for the back, and then, laying the book on it, cut it about four inches larger than the book on each of the three edges ; a less margin is apt to be troublesome, from not keeping the limber cover in its place. Then, from the top and bottom of the book at the fold cut off from the paper right-angled triangles, this piece should be cut off, because there is no breadth to the back, and consequently no edge to protect, and we do not wish to have the cover thick and uneven. The book being now placed within, the cover is folded at the end first and then at the top and bottom. If preferred, the paper at the top and bottom may be turned in between the cover and leaves without cutting off the piece mentioned. The name of the owner should be written on each book in

the proper place before it is covered, and again written on the false cover, in the same place for all. This saves much trouble. Remember that even such an apparently trifling matter as this covering the book produces an impression on the pupil's mind. It is a strong incentive to keep it nice. He sees that you care about it, and are willing to take some pains to effect it.

9. *Oblique lines.* We have published a page ruled with oblique lines for teaching uniformity of slope. Across the middle is a horizontal line, by which it is adjusted to one of the lines of the book. The slant ruled in it is the main slope of the writing, and the lines are about a quarter of an inch apart. This is not an absolute requisite, but it will be found a great convenience. The children are guided and trained in the true slope by the lines showing through the page, and they are thus enabled to direct their attention more entirely to form and movement.

CHAPTER III.

ON SCRIPT AND PRINT.

It will be found of much interest to the pupil to compare the script letters with those used in printing. Some useful suggestions result. The straight line and the circle are predominant in type, while the letters are perpendicular to the base line. The general termination is a straight line, finished by a horizontal hair-line, as in b, d, h, i, &c. If an experiment is made in printing a sentence with a pen, it will be seen at once how ill adapted these forms are for the purpose of what we term writing. The Italian hand, similarly tested for the sake of comparison, presents some interesting features for reflection. It can be written much faster than the Roman. Why? Evidently because of the slope avoiding the difficult perpendicular, and the substitution of curves for the finishing horizonal lines. Here is clearly the first step towards our present script hand. The main hinderance to speed remaining is the isolation of the letters. Each is still made separate. And, although the pen is raised less often in the formation of a letter, — compare b, *b*, for instance, — yet improvement is evidently possible in this direction.

Let us pause a moment to reflect on what should be the distinguishing characteristic of print, as compared with writing. We shall not err in saying, that of print should be legibility, — it is to be read; that of writing, facility of execution, — it is to be written. Now, there can be no question that the isolation of the letters in type, and their

vertical direction, give the highest available legibility, whilst these peculiarities are the greatest hinderance to rapidity of execution with the pen. Slope and union of the letters, so as to avoid lifting the pen and to enable a whole word to be written continuously, would overcome these difficulties, and give us the facility of rapid execution required, without interfering in too great a degree with legibility.

We have thus discovered the natural law which would control the change from type to script letters. It is very interesting and instructive to mark its operation, and to observe the influence of the instinctive demand for harmony and beauty arising from the æsthetic faculties of the mind. The broad features of the change were the introduction of slope and the union of the letters, as has been already noticed. As to the former, taste demanded that the slope should be uniform, while legibility protested against too acute an angle. As to the latter, it may be well to take a few examples. Consider the printed letter m. The idea is evidently three straight, vertical lines. It is not to be joined to any other letters, though it may "stand up" beside them. The first part, therefore, is left a straight line with its formal boundaries. The next line is to be joined to the first as part of the letter; this is effected by means of a circular turn, or hook, at its top. This is eminently suggestive. The same remark is to be made of the third part; but as, like the first, it shares the same doom of hopeless celibacy, it ends as a straight line with a similar horizontal limit. When this letter is transferred to the flowery land of script, certain natural changes take place in its constitution. It loses its stiff, formal character. All its lines become graceful and flowing. The "bolt-upright" is exchanged for the gentle slope. The circular turns are modified into ovals. The hooks of family relationship,

instead of being stuck into the shoulders, are turned into flowing links of union attached near the feet to prevent wandering. And, as the letter is now to be united to others, the ungraceful rigidness which marked its beginning and close is transformed, in both cases, into an agreeable turn and curve.

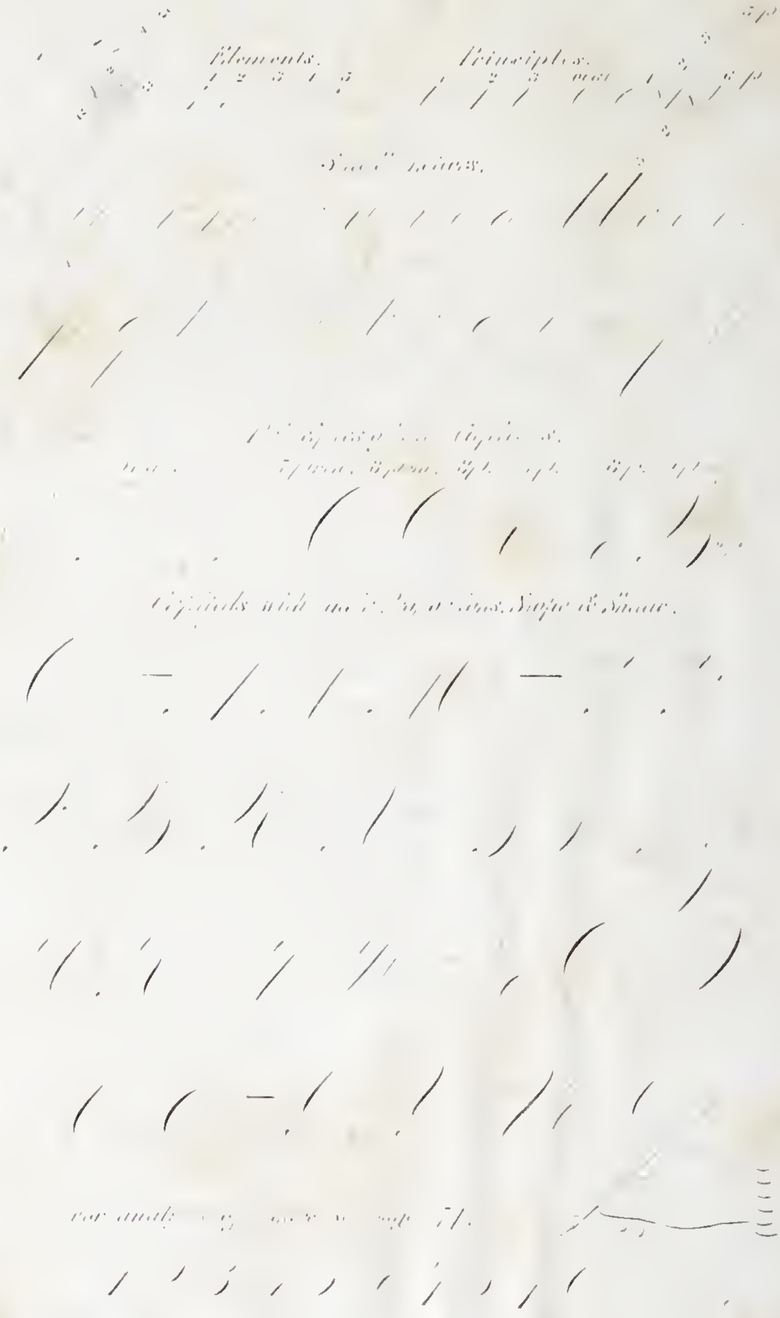
Variety is essential to beauty, and where utility is not interfered with, this feature has not been neglected. The straight line as the upper termination of the i, u, &c., for instance, has been preserved, the turn at the other extremity affording compensation; and, for connection, a curve was added to their left sides. A similar connecting line added to the b, h, k, l, would naturally pass into the formation of a loop, the elegance of which, as compared with a mere straight line, furnishes at once its apology and its justification. The t and d, being shorter and shaded, by retaining the simple form afford a pleasing diversity, and compete not unfavorably with their aristocratic brethren.

From these considerations, we arrive at the conclusion that the down-strokes are the main parts of the letters, and that the up-strokes, with a few exceptions, which the comparison we are making indicates, are merely connecting lines, either between the several parts of a letter, or for purposes of connection between that letter and others, when required. It may be noticed here, that the connecting line should never be omitted, even though the letter stands at the beginning or end of a word.

We will now consider the exceptions noticed above. The slope we have adopted in our copy-books for the down-strokes is an angle of 50° from the base line. If now we wish to connect two lines on this slope, which are a certain distance apart, by a diagonal line, it is evident that it cannot be done by a line of the same slope. We place

Analysis of the Letters.

See Chapter on Page 65, Manual



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CHAPTER VIII.

ANALYSIS OF THE LETTERS.

THERE are two grammatical divisions of letters, distinguished by their forms; the small letters, which form the main body of writing, and the capitals, which are used on special occasions. We shall begin with the analysis of the small letters, because they occur oftenest and because their forms are simpler. We shall not take them up in their alphabetical order, but in that which gives the easiest first, and shows their similarity, arising from the possession of common principles. This is the method adopted in our copy-books, in order to render our system of teaching gradually progressive.

An index is given after the general rules for small letters, so that any letter can be immediately found in the analysis.

SECTION I.

ANALYSIS OF THE SMALL LETTERS.

General Rules.

RULE 1. Letters are constructed from principles, elements, and a few exceptional forms. They consist of main and connecting lines.

RULE 2. The slope of the main lines is 50° from the base; the slope of the connecting lines is 35° from the base. The latter is modified, as occasion requires, in

joining one letter to another according to the rules for combination.

Rule 3. Every letter begins and ends with a connecting line.

Rule 4. The introductory connecting line starts from the base line on which the letters are written; the closing connecting line ends at the head line.

Rule 5. A connecting line is joined to a main line by a turn, as in Principle 1; by an angle, termed a connection, as in *u;* or by a coincidence, as in *o.* In a connection or a coincidence, it touches the main line one fourth of its height, as in *i*, *a;* except in *t*, which it joins in the middle, and *p*, which it joins at the top.

Rule 6. A connecting line crosses a main line at one third of its height, as in *h*, *e.*

Rule 7. Dots or bulbs are always made on the main slope.

Remark. — Where examples are given, reference is intended to the written forms, which may be found in the Plates.

THE SMALL LETTERS.

In teaching, it will be well to analyze every letter, not only by principles, but by elements.

See Lesson V. on Small Letters.

Index. *a*, 9 — *b*, 21 — *c*, 11 — *d*, 10 — *e*, 12 — *f*, 26 — *g*, 23 — *h*, 18 — *i*, 1 — *j*, 22 — *k*, 19 — *l*, 20 — *m*, 4 — *n*, 3 — *o*, 8 — *p*, 15 — *q*, 16 — *r*, 13 — *s*, 14 — *t*, 17 — *u*, 2 — *v*, 5 — *w*, 6 — *x*, 7 — *y*, 24 — *z*, 25 — long *s*, 27.

E. stands for Element, P. for Principle, and c. l. for connecting line.

1. — *i* = E. 3, c. l. + P. 1 + dot.

The dot is made on the main slope, one space above. For the connection, see Rule 5. Observe R. 4.

2. — u = E. 3, c. l. + P. 1 + P. 1.

The width is one space. The two main lines and the three connecting lines respectively are parallel. The turns are alike. There are two connections. See R. 5. Attend also to R. 4.

Remark. — When teaching, see that the pupil begins and ends in the column where the copy begins and ends, makes the same number of letters as in the copy, keeps the spaces and widths right, an accurate slope, and the same height throughout.

3. — n = P. 2 + P. 3.

The width is one space. Observe the parallelism. Analyze by the elements. Note that the last e. l. is different from the first two. Show that the three turns are exactly similar.

4. — m = P. 2 + n = P. 2 + P. 2 + P. 3.

The width is two spaces. Analyze by elements. Notice the difference between the commencing and the closing line. Let the four turns be exactly alike, and the two connections; and let the three main lines and the four connecting lines be on the same slope, respectively.

5. — v = P. 3 + dot + horizontal connecting line.

The width is half a space. The last up-stroke is not a connecting line, but a main part, as may be seen by comparison with the printed letter. (See Chap. III.) It has a little more than the main slope, and the width between the two sides of the letter increases gradually upwards. The dot is merely a neat finish, and a starting-point for the connecting line. It requires some care to make it neatly. Adopt this method. When the third element has been carried to the height of the letter, the pen is stopped and a slight pressure is made, returning on the line, and

immediately suspended; then a very slightly curved line is carried, nearly horizontally, to the right, for connection with the next letter. Take care that the dot is made very small, and that the line does not sag down in a clumsy manner; it is to be nearly straight.

6. — *w* = P. 3 + P. 1 + dot and horizontal c. l.

The width is a space and a half. The remarks made on *v* apply here. The second up-stroke is not a connecting line; it is parallel to the third up-stroke. It will be observed that the second part of the letter is a little narrower than the first.

7. — *x* = P. 3 + E. 1 crossing it.

The third principle on the main slope is crossed through the middle by the first element made on the slope of the connecting lines. Observe, therefore, that the three hair lines are parallel.

8. — *o* = E. 4, c. l. + oval + dot and horizontal connecting line.

To write this letter, when preceded by the connecting line on the usual slope, carry the c. l. well up to the top, increasing its curve to fit the oval, return on this line to one fourth of the vertical height of the letter, and form the oval. To close the top, we direct a very small dot to be made, and the connecting line is added as in *v*. It is optional whether the dot should be added or not. We have adopted it to insure the neat closing of the top. When used, it must be *very small*. Take care that both sides of the oval are evenly curved. The most common faults are making the left curve too straight, and leaving the letter open at the top. The latter must be avoided by carrying the connecting line well over.

9. — *a* = E. 4, c. l. + P. 4 + P. 1.

In writing this letter, the connecting line must be carried

over further than for the *o*, namely, to the extreme right of the fourth principle, to the top of which it must conform in shape, for it is retraced by the pen when that principle is made. The coincidence extends through half of the whole length of the left side measured from the tip of the nose; this coincidence is one fourth of the vertical height. The first principle coincides through one half the height with the right side of the fourth. Much attention will be needed to see that pupils do not leave the top of this letter open, a very common fault, and one most annoying to the reader, for it causes the letter to look like *u*. To avoid it, the connecting line must be swung well over.

10. — *d* = E. 4, c. l. + P. 4 + P. 1 with the First Element lengthened.

The remarks on *a* apply here; the only difference is in the height of the first principle. In writing this letter, the up-stroke of the fourth principle is continued to the height of the stem, two and a half spaces, and retraced. This stem is generally shaded. To make it look handsome when done, stop when the proper height is attained by the up-stroke, and split the pen to form a square top; then descend with a fair even stroke till the turn is reached; then the pressure is released and the turn made. By this means only can a square top, whose upper edge is parallel to the base line, be formed with well defined sharp corners. Guard against having a short club at the top.

11. — *c* = E. 4, c. l. + dot + E. 5 + E. 4 + E. 2 + E. 3, c. l.

The width is half a space, the same as *o*. The fourth element is carried up and over, just as if the second principle was to be written. Then, instead of continuing down the right side, a dot is made on the main slope, in shape

like a pear suspended by the stalk. Next, we retrace the dot and the connecting line as in *o*, and conclude with the turn and c. l. Take care that the back of the *c* is curved like the left side of an oval, which it is. Be very particular about the dot; its length should not be more than one fourth the height.

12. — *e* = E. 3, c. l. + E. 5 + E. 4 + E. 2 + E. 3, c. l.

Observe that the third element crosses the fourth at one third the height, see R. 6, to form the loop. And the Fifth is narrowed by the direction of the Third in combining with its right side. The rest of the letter is like *c*. Take care that the back of *e* is made neither too round nor too straight. It should be curved exactly like *o* and *c*.

13. — *r* = E. 3, c. l. + dot and shoulder + P. 1.

The third element is carried one fourth higher than usual, then the dot is made on the slope, as in *v* (see ***v***, No. 5). At the bottom of the dot, the pen descends perpendicularly one fourth of the height, and joins this line, by means of a slightly curved shoulder, to the first principle. Let the little perpendicular hair line, which joins the dot to the first principle, be made without effort. It will be found to arise naturally from the spring of the pen after closing the dot. Take care to avoid a clumsy shoulder and crooked first principle.

14. — *s* = E. 3, c. l. + E. 3 + E. 2 + dot + E. 3, c. l.

In this letter, also, the first connecting line is carried one fourth higher than the space; it is retraced by the downstroke, which on leaving it curves slightly to enable it to combine gracefully with the Third and Second Elements, the right side of an oval. The dot is made at the connecting line on the main slope, one fourth of the space

in height; the curve at the bottom is then retraced, and the third element added for connecting line. Observe that the two connecting lines are parallel at the slope of 35°, and the down-stroke has the main slope. The first up-stroke, E. 3, is often made too straight, and E. 2 is not drawn sufficiently low to make a good turn.

15. — p = E. 3, c. l. + E. 1 + P. 3.

The third element is carried up three spaces from the base line, the pen is stopped, and the straight line written to two spaces below the base line. The shading begins one third from the top, and is gradually increased throughout, the lower end the heaviest. See that the edge at the bottom of the shade is parallel to the base line, and that the corners are well cut. This is a very difficult stroke, and will require much practice. The pen is raised at the bottom of this part, and replaced on the paper at the base line to form the third principle. It will be noticed that the stem is carried as far above the first space as it is below it. When the handwriting is very large, this stem should be shorter.

16. — q = E. 4, c. l. + P. 4 + E. 1 + E. 2 + E. 1 + E. 4, c. l.

The first part of q is made as that of a (see No. 9). In the last part, the down-stroke is the first element. The shading begins from the base line. The turn is narrower than in the letters. The up-stroke is carried to the base line with a very slight curve nearly parallel to the down-stroke, and branches off into the fourth element, to join u, which always follows q in words. The usual connecting line of u gives place to that of q. In this stem, the last up-stroke is, in fact, merely the return of the pen at the side of the down-stroke, instead of retracing it, as is often done. A similar stem is often used for the p.

17. — t = E. 3, c. l. + P. 1 + cross.

The connecting line is carried up from the base line two and a half spaces, the height of the stem; it is to be so curved that it can be retraced half the height of the letter Since the stem is generally shaded, the difference between the curve and the straight line, as to coincidence, is lost. The stem is crossed at one third from the top by a horizontal line. The directions for making the stem of d (see No. 10) apply here.

18. — h = P. 5 + P. 3.

These principles have both been fully described. There is nothing new arising from their connection.

Caution. — A good deal of care will be needed, when this class of letters is begun, to see that the pupils do not make them crooked in the back, of the wrong slope, the sides of the loop dissimilar, the loop swayed over at the end, the slope of the third principle different from that of the fifth.

19. — k = h + loop = P. 5 + loop + P. 3.

This additional loop is written above the third principle and projecting beyond to the right, so that this part is one fourth of a space higher. To write this second part, begin with the fourth element as in h, carry it up and over one fourth higher than the space, and beyond to the right to form the loop, which is an incomplete, inverted oval, nearly horizontal. When the top of the third principle is reached, add it, and the letter is complete.

20. — l = P. 5 + P. 1.

Each principle is shortened half a space, so that the first connecting line crosses according to the rule at one third of the height; and the whole height is four spaces. See Scale of Lengths in the plate. Take care that the turn is not made broad and clumsy. See Caution, No. 18.

21. — b = l + termination of v.

The remarks on the close of v apply here so exactly, that it is unnecessary to repeat them.

22. — j = E. 3, c. l. + P. 6 + dot.

Principle 6 has already been fully described. Great care must be taken in writing this letter, that it is not too much sloped, too short, too much curved, or too much twisted under to the left. The dot is placed on the main slope, one space above.

23. — g = E. 4, c. l. + P. 4 + P. 6.

This letter begins like a (see No. 9), and the sixth principle is added. Observe the cautions under j, No. 22.

24. — y = P. 3 + P. 6.

The same remarks apply in way of caution as in No. 22.

25. — z = P. 2 + shoulder + P. 6.

This letter is formed from the union of the second and sixth principles by means of a shoulder. The top of the sixth principle is slightly curved to enable it to join gracefully with this. The length of the loop is two thirds, as in y. See cautions in No. 22.

26. — f = P. 5 + lower loop and cross.

The lower loop is peculiar to this letter. The first element of the fifth principle is continued two spaces below the base line; the turn is made to the right by the second element occupying one more space in descent, so that the part of the letter below the base line is three spaces. The line is then carried up, making the loop below the same breadth as the upper one, crosses the main stem at the base line for a very short distance at the same curve, then turns directly to the right, and is carried horizontally for the second connecting line.

27. — Long *s* = P. 5 + P. 6.

Each principle has the first element shortened half a space. It must be especially noticed that the line between the two loops is a little less oblique than the main slope, in order that the whole letter may be properly adjusted to the slope.

ANALYSIS OF THE FIGURES.

Rule. — The size of the figures is one space and a half. Except 6, 7, 8, 9, which are two spaces, the even numbers 6 and 8 extending half a space above, and the odd numbers 7 and 9 half a space below the rest.

1. The right curve beginning on the base line, written upwards to the height of one space and a half. The down-stroke touching at the point, a straight line on the main slope, gradually increasing in shade to form a square base on the line of writing.

2. Inverted oval on the main slope, shaded on the inner curve, two thirds the height, terminated with the L-foot, of which the hair-line is carried up one third the height. A line on the slope should touch the front of the oval and the left end of the horizontal loop. Height, one space and a half.

3. Small inverted oval, shaded on the inner curve, one third the height, carried under to form a little above the middle of the figure a knot, or separating loop, slanting downwards to the left, to conform to the lower oval. The lower inverted oval incomplete, shaded on the right side, occupying between half and two thirds the height. Each oval on the main slope. Height of the figure one space and a half. If preferred, it may end with a dot on the line of the oval.

4. Right curve very slight, having a little more than

the main slope, and written downwards, a hair-line throughout. Bottom curve slanting upwards to about one fourth the height, a hair-line, crossed by a straight line, half the height, gradually shaded, on the main slope. In a well formed figure the points of the three lines will be in the same straight line. Height, one space and a half.

5. Straight hair-line, half the height, on the main slope. Inverted oval incomplete, shaded on the right side, attached to the right side of the straight line; its height between one half and two thirds of the whole. Height of the figure, one space and a half. If preferred, it may end with a dot on the line of the oval.

6. Height, two spaces above the base line. Left curve, a hair-line, terminating in a direct oval, half the height, shaded on the inner curve; both on the main slope.

7. Height, two spaces. The top at one space and a half above the base line; the tail extending half a space below it. The head, like the dot and curve at the close of *v*. See No. 5, *v*. Down-stroke, a straight line, gradually shaded, touching at the top, on the main slope.

8. Height, two spaces above the base line. Double curve bent over at the top, written downwards, shade gradually increasing, heaviest in the middle of the lower curve, which is less intense than the upper; turn at the bottom, and left curve continued, crossing at the centre and terminating a short distance from the commencement of the first curve. The left sides of the two sections are on the main slope.

9. Height and position like 7. First part, Principle 4, half the height, its bottom one third from the base line, shaded on the left side. Down-stroke, a straight line, gradually shaded; coincides half the height of the Fourth Principle; extends half a space below the base line. Both on the main slope.

0. A direct oval, simple, closed at the top, shaded on the left side. Height, one space and a half. No connecting line unless joined to another, then like *o*.

SECTION II.

ANALYSIS OF THE CAPITALS.

The Principles.

The Principles of the Capitals are three in number. See Plate I. The first of these, which we shall call the Seventh Principle, there being six of the small letters, is known by several names, — the Line of Beauty, the Double Curve, and the Capital-Stem. The next, that is, the Eighth, is the Direct Oval. The last, or Ninth, is the Inverted Oval.

The Seventh Principle is a compound form, and is derived from two similar ovals, placed side by side. See Plate I. The upper and lower curve are similar, and each occupies half the length.

Remark. — This is the ideal Double Curve. It is modified in different letters. In some, the upper curve almost approaches a straight line; in others, the lower curve is intensified. In some letters the slope is changed.

The reason of this is, that the letter of which it is a part has to be considered as a whole, and an adjustment made to suit the laws of beauty and maintain the symmetry of the letter.

The Eighth and Ninth Principles are compound forms, and are derived from two similar and equal ovals, whose width equals half the height, intersecting one another, so that the spaces, measured on the common short diameter, between the sides of the ovals, the sides and the diameters,

and the diameters, shall all be equal. See Plate I. Draw the diameters to show these equal spaces, and the lines parallel to the shorter diameter to show the parallelism of the position of the two ovals.

The two left curves are not parallel. To prove that they are not, draw two concentric circles.

It will be seen at once, that, in order to have two arcs of circles parallel, one of them must be the arc of a smaller circle. Draw two similar ovals, one within the other, and the same law evidently holds good. Observe that the lines on which the equal distances of the curves are measured, are at right angles to the tangents of the curves at any point, and not parallel to one another. Now, as the compound form of the oval, which constitutes the Eighth Principle, is derived from two similar and *equal* ovals, it is evident that the left curves cannot be parallel. The divergence increases in both directions from the middle of the curve, though the difference is very slight. Do not be deceived, because the lines drawn between the two curves parallel to the shorter diameter are equal. They are not in the right direction to have the distance between the curves measured on them. If any doubt is still entertained, draw two *equal circles* intersecting one another, and the divergence of the curves from parallelism will be immediately manifest. In the Eighth and Ninth Principles the left curves are precisely *similar*, and therefore *not parallel.*

The Eighth Principle, or Direct Oval, Plate I., begins at the top of the left-hand oval, descends and follows the same to the upper point of intersection, and there runs into the left curve of the other oval. The distance between the left curves is one fourth the width of the oval in the letter *O;* in all other letters, one third.

The Ninth Principle, or Inverted Oval, is derived from the same interseeting ovals. See Plate I. It begins at the bottom of the left side of the first oval, ascends and follows the same to the lower point of intersection, and there runs into the left eurve of the other oval. Modifications will be noticed in the analysis of the letters.

THE CAPITAL LETTERS.

General Rules.

Rule 1. The height of the capitals is four spaces, the same as the loop letters.

Rule 2. The Seventh Prineiple as Capital-Stem in fourteen letters, *A*, *B*, *F*, *G*, *I*, *K*, *M*, *N*, *P*, *R*, *S*, *T*, *X*, *Y*, is ended with a dot in our elementary books. The turn is the bottom of the oval from which the lower eurve of the stem is derived. The dot is half the height of a space, and is always made on the main slope. See Plate II.

Rule 3. The Third Prineiple of the small letters begins *F*, *H*, *K*, *T*, *V*, *W*, *Z*. It starts one third the height of the letter from the base line, its centre is one third from the top of the letter, and the distanee of its main stroke from the stem is the same as its height, which is one spaee.

Rule 4. The Eighth Prineiple, or Direct Oval, is in the *O*, the whole height; as termination in the *D*, four fifths; in the *C*, *E*, *H*, *K*, *M*, *R*, *U*, *X*, one half; in *L*, *Q*, *Z*, one third. In *O*, the distanee between the left curves equals one fourth the width; in all other letters, one third.

Rule 5. The Ninth Principle, or Inverted Oval, as a commencement in *B*, *P*, *Q*, *R*, *U*, *X*, *Y*, is two thirds the height; as a termination in *B*, one half.

RULE 6. Two shades should never come next to one another; and the heaviest part of a shade should be in the middle of the curve.

RULE 7. The proportions of the ovals are to be measured on their diameters; of the letters, on their vertical height.

RULE 8. All ovals are on the main slope.

INDEX. *A*, 2 — *B*, 8 — *C*, 22 — *D*, 20 — *E*, 23 — *F*, 6 — *G*, 24 — *H*, 15 — *I*, 13 — *J*, 14 — *K*, 16 — *L*, 12 — *M*, 4 — *N*, 3 — *O*, 1 — *P*, 7 — *Q*, 21 — *R*, 9 — *S*, 11 — *T*, 5 — *U*, 26 — *V*, 17 — *W*, 18 — *X*, 10 — *Y*, 25 — *Z*, 19.

1. — *O*. We begin with this letter, because it embraces all the curves used in the formation of capitals. It is the eighth principle of full size; that is, its height is four spaces. Its width measured on its short diameter (see R. 7) equals half its length. The distance between the left curves equals one fourth the width, measured on the short diameter (see R. 7). Its long diameter is on the main slope.

CAUTION. Round the oval carefully. Do not flatten the curves. The greatest danger is at the top of the first.

2. — *A*. This letter has three parts. The first part (Rule 2) is generally written upwards, the upper curve very slight. The second part is very slightly curved to one third from the top, then it is a straight line, of which the shade gradually increases. The third part is the cross. It starts from the right foot, coincides for half a space, crosses to the left and forms a loop, the centre of which is one third the height of the letter, and on the double curve line. A line from the top through the centre of the letter would be on the main slope; hence it will be seen that the second part, or down-stroke, has a little less th

the main slope, the first part a little more. Observe that the width of the letter gradually increases from the top to the base, and regulate the first up-stroke accordingly.

Cautions. Take care that the seventh principle is very slightly curved in the upper part, or the top of the letter will be very clumsy. Do not let the left foot "sprawl" out; observe carefully R. 2 in its formation. Graduate the shade accurately.

3. — *N.* This letter consists of three parts. The first two are the same as in *A*, except in slope; at the bottom of the second, a very narrow turn is made, and a curve carried up from it, parallel to the first up-stroke, four fifths the height of the letter. The spaces on a horizontal line across the middle are equal. The shade begins as in *A*, and is heaviest just before the turn. A line drawn through the centre of the letter, dividing it into two equal lateral halves, would be on the main slope. Observe the gradual increase and diminution of width in the two sections. See the cautions on *A*.

4. — *M.* This letter has four parts. The first three are the same as *N*, except that the third stroke is carried to the full height. The fourth part is curved from the top, and closes with the direct oval (see R. 4). Observe the shades carefully. A line through the centre, dividing the letter into equal lateral halves, would be on the main slope. The widths at the top and the two at the base are equal. On a horizontal line through the middle there are three equal spaces.

5. — *T* has two parts. Its commencement is the third principle (see R. 3). Its stem is the seventh principle (see R. 2) on the main slope. The strongest curve is in the lower section. There is no shade except in the third principle and dot. Care is needed in making P. 3.

6. — *F* is *T* crossed in the middle by a small double curve placed horizontally, which is itself crossed by a small straight line on the main slope.

7. — *P*. This letter has two parts, the stem and the cap. For the stem, see R. 2. It is on the main slope. The cap begins with the inverted oval, two thirds the height, R. 5, on the main slope, crossing the stem at right angles, the highest point of the cap being in the middle of the line between the section of the oval and the stem; it is continued with the right curve, and terminates on the stem in a dot at half the height of the letter. For important measurements, see Plate. On the short diameter of the first oval produced to the stem, there are four equal spaces; on a parallel line from the left curve of the oval crossing the stem to the other curve, two equal spaces. A line on the main slope through the oval would pass through the dot. The inverted oval is higher than the cap.

8. — *B*. The stem and the cap are like *P*, only that the right side is carried down one third instead of a half, and the dot is omitted. The separation between the upper and lower sections of the right side is made by a small horizontal loop. The lower curve ends with the inverted oval, see R. 5. A straight line drawn on the main slope, touching the right side of the upper curve, would pass through the centre of the lower oval; the lower right curve, therefore, projects beyond the upper. For measurements, see Plate. Across the first oval to stem on its short diameter produced, there are four equal spaces; similarly as to the last oval, three. On a parallel line from the right side of the first oval to the right side of the upper lobe, there are two equal spaces.

9. — *R* is like *B* as far as the separating loop, which is here made at right angles to the main slope. After

that, the descending curve is turned back to finish with the direct oval (see R. 4.) For important measurements, see Plate. Across each of the two ovals to the stem or their short diameters produced, there are four equal spaces. On a parallel line from the right side of the first oval to the right side of the upper lobe, there are two equal spaces. A line on the main slope through the oval would pass through the dot.

10. — *X.* The capital-stem, R. 2, is made first, written downwards. Then the inverted oval, R. 5, and direct oval, R. 4, joined by a straight line on the main slope. The two parts of the letter coincide through half the height, commencing at one fourth from the top. For measurements, see Plate. Across the ovals, as in *R*, there are four equal spaces. The remark on the dot applies also.

11. — *S.* Begin from base line with the right curve on the slope of the connecting lines, to half the height of the letter, then form a loop on the main slope, half the height, complete a double curve, and end with a dot on the commencing line. The dot is half a space high and on the main slope. The double curve is the essential part of this letter. Notice how the loop is formed on the upper part, and the greater intensity of curve in the lower part. Let the shade begin just below the loop, and be nicely graduated. Give much attention to the lower turn and the dot. An oblique line through the loop lengthwise has similar curves formed by the double curve, on the upper left and lower right side.

12. — *L.* This letter begins like *S*, but the double curve, instead of making a turn to end with a dot, is carried to the left to form a horizontal loop, which rests on the base line and whose thickness is half a space; it de-

seends on the right side to touch the base line at precisely the same distance from the crossing as on the left side, and ends with the direct oval, R. 4, incomplete. The lower curve of the stem is stronger than the upper. It will be observed that the upper curve of the horizontal loop and the curve to the right which touches the base line together form a double curve. The right section only of the direct oval is used. The shade begins as in *S* below the loop. The bottom of this letter, which may be termed the *L*-foot, occurs also in *D*, *Q*, and one form of *Z*. Take care that the direct oval is made on the main slope. For the slope, see Plate, and remarks on *S*.

13. — *I*. Begin with the left curve at the height of one space from the base line, carry it round to the right to form a circular loop, and continue the curve to the height of the letter. The second part is the capital-stem and dot, R. 2, passing through the centre of the circular loop, whose centre is also in the middle of the stem. Take care that the upper part of the head is not made too broad. Modify the curve gently to accord with the upper part of the stem.

14. — *J*. This letter begins as the *I*, but the circular loop is not so high; its lower curve is one space from the base line, and the double curve is carried down to form a loop, the same length as *j*, three spaces below the line. The left curve of the loop crosses at the base line. A line through the length of the loop should pass through the upper part of the letter. Notice the slight intensity of the curve in both parts of the stem. The heaviest shade is in the middle of the right side of the loop. The loop is one space wide.

15. — *H*. The commencement is the third principle, R. 3. Next, the double curve with a loop, the hair stroke of

which is carried across and upwards, on the same slope, to form another loop similar to the first; this side is finished with the direct oval, R. 4. The first section is a little lower than the second, which is the full height. The middle of the hair line between the two stems is half the height of the letter; hence each loop is a little less than half the height. An oblique line through the centre, dividing the central space equally, would be on the main slope. The width between the down-strokes at the middle is one space. The second loop is longer than the first.

16. — *K.* The first part is *T*, No. 5. The second part consists of the left curve turned back to make a small separating loop, then continued symmetrically with the upper part, and closed with the direct oval, R. 4. The separating curve is inclined as in *R*, and is about one third the height of the letter from the top. The slope is the same as in *H.*

17. — *V.* Commencement, R. 3. Next, down-stroke straight, shaded heaviest near the turn, which is narrow, like those of the small letters. Then, up-stroke parallel to previous one, branching off into the left curve, and terminated at the same height as the top of the introductory part. An oblique line through the centre, dividing the letter into two equal parts, would be on the main slope.

18. — *W.* Commencement, R. 3. Next, double curve down ending on the base line; then, double curve up with more slope. The second down-stroke is like the second of *A*, No. 2, very slightly curved one third, and then straight. The final stroke is the left curve, as in *N.* The spaces on a horizontal line drawn through the middle of the letter are equal. See Plate. A line from the middle point at the top through the centre of the letter would be on the main slope.

19. — *Z.* Commencement, R. 3. The down-stroke and foot like *L*, No. 12, except that the lower curve of the stem is a little less intense. It has the main slope.

20. — *D.* This letter begins with the double curve, a little below the height of the letter; its foot is like that of *L*, No. 12, until it touches the base line on the right side, whence it is carried up as the right side of an oval, crosses the stem near its top, and ends with the direct oval, R. 4. Especial attention is requested to the illustration in the Plate. The spaces as marked on the lines are all equal. A line drawn on the main slope, touching the second curve of the finishing oval, would pass through the end of the horizontal loop. The highest part of the letter is well in front of the stem.

21. — *Q.* Begin with the inverted oval, R. 5, and end like *L*, No. 12. The oval is on the main slope. For measurements, see Plate.

22. — *C.* Begin with the right curve from the base line to half the height; next, make a loop half the height; end with the direct oval, R. 4. Take care that the loop does not pitch over too much. It necessarily has more than the main slope.

23. — *E.* Begin with the left curve a little distance from the base line, carry it two thirds high, and make a loop one third; continue the curve to form a small separating nearly horizontal loop to the right, and close with the direct oval, R. 4. The separating loop is a little inclined down to the right, to correspond to the lower oval. Especial attention should be given to the illustration of this letter in the Plate.

24. — *G.* Begin with the right curve; then, a loop two thirds the height of the letter; continue the down-stroke as the bottom of an oval, whose width is twice that of the

loop, the bottom of the turn being one fourth from the base line. End with a double curve and dot, R. 2; the double curve is half the height of the letter. Both parts of the letter are on the main slope. A line through the length of the loop would pass through the dot.

25. — *Y.* This letter begins with the inverted oval, R. 5, continues like third principle, to one fourth from the base line, but the lower turn much narrwer than the upper, and ends with the double curve and dot, R. 2; height, two thirds. For measurements, see Plate. On the short diameter produced to the stem, we find equal spaces occurring thus, between the lines of the letter, one, two, one, two.

26. — *U.* Begin with the inverted oval, R. 5, continue as *Y*, except that it rests on the base line. The second part is a straight line ending with the direct oval, R. 4. The top of the second part lower than that of the first. Its width is two spaces. For measurements, see Plate and remarks on *Y*.

CHAPTER IX.

CLASSIFICATION OF LETTERS.

CLASSIFICATION relates to the arrangement of the letters in groups, according to their possession of common forms. Since every letter must have something peculiar to distinguish it from others which have a common principle, classification includes a description of this peculiarity, which is termed the characteristic.

CLASSES OF SMALL LETTERS.

The most natural and convenient division of the small letters seems to give four classes. Some letters will be found to belong to two of them. The reason of the position here assigned is obvious.

FIRST CLASS. — Those letters which consist chiefly of the first, second, and third principles, *i*, *u*, *n*, *m*, *v*, *w*, *x*.

SECOND CLASS. — Those formed from the oval, or the fourth principle, *o*, *a*, *c*, *e*.

These two classes contain all the short letters except two.

THIRD CLASS. — Those which have stems formed of the first element, *p*, *q*, *t*, *d*. These are called the Stem Letters.

FOURTH CLASS. — Those which have the fifth and sixth principles, *h*, *k*, *l*, *b*, *j*, *g*, *y*, *z*, *f*, long *s*. These are the Loop Letters.

Besides these, there are two letters whose forms are anomalous, *r*, *s*.

Characteristics.

The characteristics of the letters are as follows: —

In the First Class. Of *i*, *one* straight line with *turn* at the bottom and the dot above it; — of *u*, *two* straight lines with *turns* at the *bottom*; — of *n*, *two* straight lines with *turns* at the *top*; — of *m*, *three* straight lines with *turns* at the *top*; — of *v*, its *two* nearly parallel sides and the dot; — of *w*, its alternately parallel sides and the dot; — of *x*, the straight line forming the cross.

In the Second Class. Of *o*, the oval; — of *a*, the addition of the first principle; — of *c*, the dot; — of *e*, the loop.

In the Third Class. Of *p*, the third principle affixed; — of *q*, the fourth principle prefixed; — of *t*, the cross; — of *d*, the fourth principle prefixed to the *t*-stem without the cross.

In the Fourth Class. Of *h*, the third principle affixed; — of *k*, the knot or kink; — of *l*, the turn at the bottom; — of *b*, the parallel sides of the lower part and the dot; — of *j*, the dot; — of *g*, the fourth principle prefixed; of *y*, the third principle prefixed; — of *z*, the second principle and shoulder; in the other form, the zigzag; — of *f*, the knot.

In the anomalous letters. Of *r*, the dot and shoulder; — of *s*, the twist on the right side.

Order of Introduction.

The order in which the small letters are introduced in our copy-books is this (see Plate): *i*, *u*, *n*, *m*, *v*, *w*, *x*, *o*, *a*, *d*, *c*, *e*, *r*, *s*, *p*, *q*, *t*, *h*, *k*, *l*, *b*, *j*, *g*, *y*, *z*, *f*, long *s*.

The beautiful harmony and progressiveness of this order will be seen from the following statement of the principles, and the letters in which they occur.

Short Letters.

Prin. 1, *i*, *u*.
Prin. 2, *n*, *m*.
Prin. 3, *n*, *m*, *v*, *w*, *x*.
Prin. 4 and Oval, *o*, *a*, (*d*,) *c*, *e*.
Irregular. Prin. 1, *r*. Oval, *s*.

Remark. — The letter *d* is introduced here because of its great similarity to the *a*; the only difference being the greater length of the first element in the first principle.

Stem Letters.

Element 1, *p*, *q*, *t*, *d*.

Loop Letters.

Above the line, Prin. 5, *h*, *k*, *l*, *b*.
Below the line, Prin. 6, *j*, *g*, *y*, *z*.
Above and below, Prin. 5 and 6, *f*, long *s*.

Occurrence of Principles and Elements.

The number of letters in which the different principles, &c. occur is as follows. We find

Prin. 1 in 9 letters, *i*, *u*, *w*, *a*, *r*, *t*, *d*, *l*, *b*.
Prin. 2 in 3 " *n*, *m*, *z*.
Prin. 3 in 9 " *n*, *m*, *v*, *w*, *x*, *p*, *h*, *k*, *y*.
Prin. 4 in 4 " *a*, *d*, *q*, *g*.
Prin. 5 in 6 " *h*, *k*, *l*, *b*, *f*, long *s*.
Prin. 6 in 5 " *j*, *g*, *y*, *z*, long *s*.
El. 1 in 2 " *p*, *q*.
Oval in 4 " *o*, *c*, *e*, *s*.
Anomalous form, lower loop of *f*.

Characteristics.

The characteristics of the letters are as follows: —

In the First Class. Of *i*, *one* straight line with *turn* at the bottom and the dot above it; — of *u*, *two* straight lines with *turns* at the *bottom*; — of *n*, *two* straight lines with *turns* at the *top*; — of *m*, *three* straight lines with *turns* at the *top*; — of *v*, its *two* nearly parallel sides and the dot; — of *w*, its alternately parallel sides and the dot; — of *x*, the straight line forming the cross.

In the Second Class. Of *o*, the oval; — of *a*, the addition of the first principle; — of *c*, the dot; — of *e*, the loop.

In the Third Class. Of *p*, the third principle affixed; — of *q*, the fourth principle prefixed; — of *t*, the cross; — of *d*, the fourth principle prefixed to the *t*-stem without the cross.

In the Fourth Class. Of *h*, the third principle affixed; — of *k*, the knot or kink; — of *l*, the turn at the bottom; — of *b*, the parallel sides of the lower part and the dot; — of *j*, the dot; — of *g*, the fourth principle prefixed; of *y*, the third principle prefixed; — of *z*, the second principle and shoulder; in the other form, the zigzag; — of *f*, the knot.

In the anomalous letters. Of *r*, the dot and shoulder; — of *s*, the twist on the right side.

Order of Introduction.

The order in which the small letters are introduced in our copy-books is this (see Plate): *i*, *u*, *n*, *m*, *v*, *w*, *x*, *o*, *a*, *d*, *c*, *e*, *r*, *s*, *p*, *q*, *t*, *h*, *k*, *l*, *b*, *j*, *g*, *y*, *z*, *f*, long *s*.

The beautiful harmony and progressiveness of this order will be seen from the following statement of the principles, and the letters in which they occur.

Short Letters.

Prin. 1, *i*, *u*.
Prin. 2, *n*, *m*.
Prin. 3, *n*, *m*, *v*, *w*, *x*.
Prin. 4 and Oval, *o*, *a*, (*d*,) *c*, *e*.
Irregular. Prin. 1, *r*. Oval, *s*.

Remark. — The letter *d* is introduced here because of its great similarity to the *a*; the only difference being the greater length of the first element in the first principle.

Stem Letters.

Element 1, *p*, *q*, *t*, *d*.

Loop Letters.

Above the line, Prin. 5, *h*, *k*, *l*, *b*.
Below the line, Prin. 6, *j*, *g*, *y*, *z*.
Above and below, Prin. 5 and 6, *f*, long *s*.

Occurrence of Principles and Elements.

The number of letters in which the different principles, &c. occur is as follows. We find

Prin. 1 in 9 letters, *i*, *u*, *w*, *a*, *r*, *t*, *d*, *l*, *b*.
Prin. 2 in 3 " *n*, *m*, *z*.
Prin. 3 in 9 " *n*, *m*, *v*, *w*, *x*, *p*, *h*, *k*, *y*.
Prin. 4 in 4 " *a*, *d*, *q*, *g*.
Prin. 5 in 6 " *h*, *k*, *l*, *b*, *f*, long *s*.
Prin. 6 in 5 " *j*, *g*, *y*, *z*, long *s*.
El. 1 in 2 " *p*, *q*.
Oval in 4 " *o*, *c*, *e*, *s*.
Anomalous form, lower loop of *f*.

The horizontal loop, or *L*-foot, is found in four letters, *L*, *D*, *Q*, *Z*.

The first element, very slightly curved to one third from the top, is found in *A*, *N*, *M*, *W*; straight throughout, and closed by a turn, in *V*.

CHAPTER X.

COMBINATION OF LETTERS.

COMBINATION treats of the arrangement of letters in words at proper distances. This is generally spoken of as Spacing. It is effected by the connecting lines of the two letters running into one another, and thus forming one line, which may be distinguished as the Combining Line.

Good taste requires that the letters in a word should look about the same distance apart; in other words, that the space on the line which the word occupies should be evenly filled. If this is neglected, the writing will look "patchy," — crowded in one place, scattered in another. We propose, therefore, to give rules for these distances, and to point out the reasons on which they depend.

The controlling influences which govern them are the nature of the lines to be combined, and the means by which the combination is made. Sometimes it will be seen that increase of distance is merely nominal, depending on the situation of the side to or from which the measurement is made. The points for the measurements are the centres of the adjacent sides of the letters.

Every letter ends with a straight line, having a diagonal connecting line with a turn, as *u*, or without a turn, as *j*, *q*; or is an oval with a horizontal connecting line; or is open on the right side, as *c* and *e*. Every letter begins with a straight line, having a diagonal connecting line without a turn, as *u*, *h*, *p*, or with a turn, as *n*, *y*; or is an oval, as *o*, *a*; or is open on the left side, as *s*, in which the

up-stroke is merely the connecting line. The combinations of these different classes of letters may be determined by the following rules: —

Rule 1. When two straight lines, or a straight line and an oval, are united by one turn and a combining line, or by a combining line only, the distance between them is one space, the height of *o*; as, *ii*, *ni*, *it*, *ih*, *ip*; *io*, *ie*; *gi*, *go*, *qu*, &c. Between *is*, *us*, &c. the distance is really the same, because the width of *s* equals that of *o*; but since we have to measure to the right side, it is a space and a half.

Remark. — In *it*, *ih*, *ip*, where the combining line joins the straight line at one half, one third, and the top, respectively, the distance is kept by giving less slope to the combining line. In *gi*, *qu*, &c. the same means are used.

Rule 2. When two straight lines are united by two turns and a combining line, the distance is one space and a half; as, *in*, *ir*, *un*, *my*, *pn*, &c.

Remark. — This gives room enough to make the turns properly, and the line crossing diagonally prevents the distance from seeming too wide.

Rule 3. When two ovals, or an oval and a straight line, are united by a combining line only, or by a combining line and turn, the distance is three quarters of a space; as, *oo*, *oc*, *od*, *ba*, *ve*, *wo*; *oi*, *ot*, *oh*, *op*, *vi*; *on*, *vn*, &c. The last part of *b*, *v*, *w* is equivalent to the oval. In *os* the distance is really the same, since *s* is the width of *o*; but as we measure to the right side, it is a little more than one space.

Remark. — A full space for the distance mentioned in the first part of this rule would be too much, because, as the connecting line is horizontal, there is nothing to disguise it. We have, therefore, to bring the main lines nearer.

Rule 4. When *c* or *e* precedes a letter beginning like

Occurrence of Principles.

The capital-stem, or line of beauty, ending with a dot, occurs in fourteen letters, *A*, *N*, *M*, *T*, *F*, *P*, *B*, *R*, *X*, *S*, *I*, *K*, *G*, *Y*.

The capital-stem is written, —

Generally upwards and light, in three letters, *A*, *N*, *M*.

Downwards and light, in eleven letters, *T*, *F*, *P*, *B*, *R*, *X*, *H*, *K*, *W*, *Z*, *D*.

Downwards, light, and short, in two letters, *G*, *Y*.

Downwards and shaded in the lower curve, in three letters, *I*, *L*, *S*.

Downwards, prolonged into a loop, shaded on the right side, in one letter, *J*.

The third principle of small letters is used for the commencement of seven letters, *T*, *F*, *H*, *K*, *V*, *W*, *Z*.

The direct oval, when of full size, forms the *O*.

Four fifths of the vertical height, it is the end or front of *D*.

Half the height, it terminates eight letters, *M*, *R*, *X*, *H*, *K*, *C*, *E*, *U*.

One third the height, it ends *L*, *Z*, *Q*.

The inverted oval, two thirds the height, commences seven letters, *P*, *B*, *R*, *X*, *Q*, *U*, *Y*.

Half the height, it ends one letter, *B*.

A curve and circular loop are used for the head of *I*, *J*.

The loop, half the height of the letter, is used in five letters, *S*, *L*, *J*, *H*, *C*; one third the height, in *E*; two in *G*.

The knot, kink, or small separating loop, is found in three letters, *B*, *R*, *K*; turned in the opposite direction, in *E*.

The horizontal loop, or *L*-foot, is found in four letters, *L*, *D*, *Q*, *Z*.

The first element, very slightly curved to one third from the top, is found in *A*, *N*, *M*, *W*; straight throughout, and closed by a turn, in *V*.

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CHAPTER XI.

ON DRILL AND COUNTING.

In teaching writing it will be found of the highest importance to have the class under perfect discipline. As the mind is very materially influenced by the body, accuracy of position and precision of movement tend greatly to promote it. The class should be drilled to act as a unit. Repeat and repeat, till something like perfection is reached. Then the class will take a pride in it. There is something fascinating in the simultaneous movement of every member of a body. It is the charm of all military manœuvres. Now, if we consider, on the one hand, to how many *small* things attention is necessary to have good writing, or at any rate rapid progress, and, on the other hand, the natural inattention of children, how their eyes look without seeing, how their ears admit sonorous vibrations but convey no intelligence to the mind, how soon they can bring their hands to act mechanically without the supervision of active thought, we shall not hesitate to admit, that any means which will aid in awakening their attention and keeping it fixed will be of immense value. The best means we have found by experience to be writing in concert; the various parts of the letters or principles being written to the count of numbers, audibly sounded by the teacher or the class Every pupil must, of course, have the same book, and write the same copy.

It has been objected to this, that we cannot expect those who are full of nervous excitement to write at the

same rate as those whose temperament is dull and lymphatie; that it is not right thus to retard the rapid, and urge on so fast the slow; that nature has established certain differenees whieh we ought to respect. In order to form a eorreet judgment, let us examine the point in question in the light of what wisdom has devised in other exereises, upon perfecting whieh the utmost attainments of seienee have for eenturies been eoneentrated. We mean military drill.

Here is a body of men with every variety of temperament and with legs of different lengths, — we do not mean in the same individual, — and they will have to mareh, as their ordinary means of loeomotion. How shall it be managed? A certain length of step is fixed upon, and a given time, and they are all, whether long-legged or short-legged, whether nervous or lymphatie, taught this step and time. "O, but," says our follower of nature, "this is all wrong, very wrong." But how, then, shall we manage? How ean we keep them in order, or perform a single evolution, if each man ehooses his own length of step and his own time for performing it? He answers, that in this ease we must submit to the stern requirements of necessity; that during the time of instructing the men, or when in face of the enemy, it may not be so very objeetionable; but adds, as his eyes brighten with anticipated triumph, that the officers do not keep the men in the ranks during a long march. We reply, that our method is precisely the same; we use counting and a given time for purposes of instruetion; when the course is completed, and their pen marches over the ample pages of the folio or the ledger, each one may adopt that rate of speed whieh best suits his natural endowments.

But we are not yet satisfied with this argument. We go

further, and claim that the objections urged against the use of counting are the strongest arguments in its favor. We hold that it is precisely this restraint that the nervously irritable need, this urgency that the lymphatic require. The very fact that it tempers the impatience of the one, and stimulates the inertness of the other, proves its excellence. Again, the manner in which these two ends are gained is worth consideration. The restraint operates on the individual as part of a whole. The irritability aroused by personal restraint is unfelt in the concerted action. It is not as if *his* pen must be kept to a slow pace; it keeps that pace almost naturally, from the very sympathy of united movement. He loses, so to speak, the individuality of himself and pen. He is part of an acting body. He is not directing an independent pen, but one out of a number. Give a pupil of this temperament a lesson by himself. Keep him only so far restrained as is absolutely necessary for attention to the proper formation of the letters, and you will soon see at how great a disadvantage you are working. The same line of reasoning applies to those pupils who are naturally slow. There is an immensely powerful and tranquillizing effect upon each member of a disciplined body, owing to the very massiveness of united action. It is more strikingly manifested in a large class than in a small one.

So far our argument may seem to apply to two extreme cases, rather than to the whole class. Is writing in concert equally advantageous for the far larger number of ordinary temperament and disposition? We think it is. It compels them to the observance of sufficient time to form the close of a letter with the same accuracy as the beginning. What teacher of writing has failed to notice how prone scholars are to make the third section of the letter *m* slope

the wrong way, owing to the hurried movement with which they finish it? It is just the same with the close of other letters and words. In fact, time for thought is required for every part of the letter, and the movement should be equally maintained throughout. This is effected by counting.

Another great advantage is, that the teacher can save a great deal of time by addressing his instructions to the whole class at once, and can best secure their attention from the immediate bearing of it upon the exercise to follow. Whereas, if each pupil has been allowed to write at his own rate of speed, though the writing may be stopped and the instruction addressed to all, what interest will those feel in it who have already finished the copies to which it refers? What benefit will they derive from it, since its advice and warnings are no longer available? In every point of view, theoretically, the method of writing in concert would seem to offer great advantages; the testimony of actual experience abundantly confirms it. We have seen classes of all sizes, from twelve to three hundred, making use of it with the happiest effect. It must, of course, be borne in mind that it is intended for the earlier part of the course, and not for continuance through the whole. When its ends have been answered, and the pupils write every part of a letter or combination with an equable movement, without hurried terminations, its end is answered, its object accomplished. It is no longer needed. All that remains to be added on this head is, to urge the teacher to see that it is faithfully carried out, especially in tracing, and that the pupil thinks what each part of the letter is to be, before he writes it.

Connected with this branch of the subject is the commencing and closing of the exercise, inasmuch as concerted

action is necessary. It is a matter of importance, because, if not well managed, an immense amount of valuable time is lost. We one day saw a teacher engaged in distributing books to a class, which numbered about fifty. They were seated at desks of the modern style. The teacher, having the pile of books, took up one, looked at the name on it, mentioned it not very loud, and handed it to a bright little scholar, who started off at a swift walk to hunt out the pupil to which it belonged, and to deliver it; then, back again to the teacher. The same plan was followed throughout. As there were fifty books to be delivered, as they had been collected without any regard to order, or the class were seated in different places, the journeys of the messenger were very agreeably diversified; and as no sign was made by the pupil whose book was in the hands of the express, a voyage of discovery was sometimes made in the remotest regions, before the owner was discovered in one of the front rows. The messenger, during *one whole quarter of an hour*, took a very fair amount of exercise, and the class was kept in a pleasing state of excitement as to whose book would come next, and whether the messenger would find the proprietor at the end of a straight course, or after making repeated tacks. Some may think that this time would have been more profitably spent in writing. For the use of such, we append the following method of opening and closing the exercise, which we have used in large public schools. It will be found very economical in point of time, and is susceptible of any modifications which may be thought desirable.

Commencement of an Exercise.

Remembering that the books are always collected in the reverse order to that in which they are given out, the moni-

to goes down the aisle and places on the desk at the right-hand end of each row, in front of the boy, with the backs to his left, the number of books which belong to the row, taken from the top of the pile he carries. A second monitor, following, places the same number of pens above the books, with their points to the right of the pupil seated. A third does the same with the pen-wipers. When this is done the teacher gives the following words of command: —

"Take Books." The pupils to the right (the teacher's left) insert their left hands above the back of the lowest book, and grasp those above with the thumb, lift them, and take hold of the other side of the books with their right hands. At a wave of the teacher's hand they place them in front of the pupils on their left, who immediately insert their hands, lift, &c., and at the next wave of the hand pass as before, and so on till each pupil has his own book left before him. If there are any vacancies, caused by the absence of pupils, the nearest pupil moves to the vacant place and officiates, then immediately resumes his own seat, and all goes on as before.

"Take Pen-wipers." The pupils to the right pass all but one, at a wave of the teacher's hand; the next all but one at the next wave, and so on.

"Take Pens." The pupils to the right take up the heaps of pens in their right hands, with the points downwards, and transfer all but one to their left hands. At a wave of the teacher's hand, they pass them to the pupils on their left, who receive them with their right, transfer and pass at the next wave as before, and so on till each pupil has his pen in his hand, point down, and held at the level of the breast. Vacancies are provided for as before. The teacher now makes a downward motion of the hand. All lay their pens on the back of the desk, with the points to the right.

The teacher gives numbers for the rest of the drill. 1. Take Position. (See the chapter on Position and Movement for this and the following orders.) 2. Adjust Books. 3. Adjust Arms. 4. Right hand finds place in the books at upper corner. 5. Books are opened at page. Left hand replaced. Right hand to be just below the lower edge of the book. 6. Right hand of each pupil seated to the right on the inkstand lid. 7. Open inkstands and right hand as before. 8. Take pens with points downwards, and adjust for writing without moving the left hand. 9. Dip the pen in the ink and keep it there. "Ready." Pen placed on paper, where commencement is to be made. "Write." The pupils begin and count as directed, 1, 2, — 1, 2, &c.

At the end of the column-line, "Back," "Ready," "Write," 1, 2, &c. After two or three lines of the column are written, give the order "Ink," as in 9. This keeps the ink from clogging the nibs. If the pupils sit fronting the desks, at the close of every fourth line the order should be given, "Move up Books," or the arm will get off the desk. If the pupils are to trace, omit 9, and say "Trace," to instruct them what to do, "Ready," as above, and "Trace the Copy," to begin.

Closing the Exercise.

1. Wipe Pens. 2. Position. 3. Pass Pens, beginning in reverse order to the giving out. 4. Hands of boys to the right on lids of inkstands. 5. Close inkstands. 6. Books; they have now had time to dry. 7. Pass books; each boy at the successive waves of the hand, places the book or books before him, on the top of that before the boy on his right. 8. Pass pen-wipers. The teacher gives the numbers only.

The monitors then collect the books, the pens, and the pen-wipers. To keep the heaps of books apart, a piece of paper is placed on each heap as it is collected. The monitor in giving out the books leaves the paper on the desks. In giving out, he takes from the top of the pile, beginning in front of the room; in collecting, he places on the top, beginning at the back of the room. This drill is strongly recommended as one of great beauty and utility, when accurately executed. The class can by this means be prepared for work in a third of the time required by any other method.

On Counting.

The *i*, *e*, *x*, *t*, *l*, *j*, and long *s* require three motions, and are counted 1, 2, 1, — the odd numbers up, the even down. The *c*, *r*, *s*, *z*, and *f* have four motions, and are counted 1, 2, 3, 1. The *u*, *n*, *v*, *o*, *a*, *d*, *p*, *q*, *h*, *b*, *g*, and *y* require five motions, and are counted 1, 2, 3, 4, 1. The *k* has six motions, counted 1, 2, 3, 4, 5, 1. The *m* and *w* have seven motions, and are counted 1, 2, 3, 4, 5, 6, 1.

Cross the *t* and *x*, and dot the *i* and *j* after the group or word is finished. Cross the *x* upwards to insure a hair line. For small children, for *c*, *r*, *s*, *z*, 1, 2, 3, 4, 1, may be counted if preferred. It will be found important, also, to show on the board precisely how much of the letter is made at each count.

proposed, — What are the successive steps by which these two branches, comprising the end to be aimed at, are to be prosecuted? They run in parallel lines, teaching the form and teaching the execution.

First, as regards the steps in teaching form. The teacher should begin by acquiring an intelligent appreciation of the System of Penmanship he intends to use. He must understand the plan on which it is constructed, that is, if it have one. We proceed to the discussion of our own, as that in which we are more particularly interested. Though other systems boldly claim perfection, some of them in as many as twenty different particulars, yet we hope to be excused for a natural partiality towards our own offspring, whose origin and growth are the expressed result of years of patient thought and practical experience. It will be noticed that the principles are introduced first; the reason is, that they are the component parts of letters. Why, then, should not the elements, which are still simpler forms, be given for separate practice? Because they are too small and fragmentary. Our system, therefore, begins with the principles, though in No. 1, the first element, which is the straight line, is given, because every letter, except *c*, *e*, *o*, *s*, has this element written downwards for one or more of its main lines. If now we add at the bottom of it a turn and connecting line, we have the first principle, and can readily perceive why it has this precedence; namely, because it is written downwards, like Element One, and is formed by an addition to it. The next modification of the straight line arises from uniting the connecting line to it by a turn at the top; this is the second principle. The third has two connecting lines joined to the straight line by turns both at the top and bottom. The fourth principle is the oval and its modified

form as used in combination. All the short letters result from connections of these four principles; hence two kinds of exercises are given, viz. groups in which a principle is repeated several times, and similar combinations of a single letter. The principles are thus introduced in order, and the short letters, the simplest forms always having the precedence. Next, we have the stem-letters, and then the loops, which are the most difficult of all. Suitable exercises accompany them. The capitals come last.

In the small letters the forms are fixed, but those of capitals are so varied that a selection has to be made. What principles should guide us? Capitals are a very difficult part of the work. They are large, and, from the very nature of their use, stand out prominently and attract attention, so that any fault in them is very easily perceived. Few persons will hesitate, then, to concede, that there should be but one set for beginners, and those of the simplest form. This is a very important point, and claims the teacher's earnest consideration in the choice of a system. Fancy capitals are very beautiful, and catch the eye, but let the judicious teacher reflect as to whether they are characterized by that simplicity and facility of execution which are so necessary for elementary instruction. Are they the best adapted, nay, are they in the least adapted, to fix the pupil's mind upon the elementary principles of form, and are they easy enough for his unskilled hand to execute? For ourselves, we are satisfied that they are utterly unfit for the former purpose, and that they are far too difficult for the latter. The pupil has not yet advanced far enough to strike them with a free hand; they cannot be even tolerably written in any other way. This has led us to decide upon very plain and simple, though elegant forms. "But," said a teacher to

one of our agents, "I do not like your capital-stem ending in a dot. I very much prefer that it should terminate with a curve gracefully swung round." Said our friend, "Which is easiest?" "O," replied the teacher, "I suppose the dot." "Which is most interesting," resumed our friend, "a story or the A B C?" "A story of course." "Then," replied he, "why do you not set a class to read on the story before they know their A B C? In writing it is just the same, the A B C before the story, the dot before the graceful oval." It may not appear at first sight why the fancy capitals, when only indifferently made, should look so much worse than the plain ones though even badly made, but the fact is unquestionable. The reason is very simple. It is because the former are more pretentious. When a child presumes to do a man's work and fails, he becomes ridiculous, whereas a man failing in the same work is not ridiculous at all; it is on account of the presumption displayed by the former. Take an instance from skating. An awkward fellow, who might escape notice and pass muster, if he could rest contented with plain running, becomes grotesque and a laughing-stock when he attempts the graceful figures of the finished skater and fails of success. But one thing can palliate presumption, — that is, success. Our capitals will be found, for the above reasons, reduced to the simplest forms and susceptible of accurate measurement. They cannot be expected to have the grace and beauty of the others, but we claim that they are the best adapted to the end for which they are designed. In No. 12, we have given what are termed the current forms, and they are practically applied in mercantile forms in No. 7, which should follow No. 12. When the pupil, having pursued our method faithfully, arrives at these, he is qualified, both as to eye

and hand, to "strike" them with good prospect of success. In our elementary books we adhere to one form, and that the simplest.

The next point to be noticed in our system is the gradual introduction of longer words, so that the hand is trained by degrees to use the comital and sliding movements in writing across the longest without difficulty. This is an absolutely essential point, and one of the special reasons why columns are given and directed to be written downwards. Another reason for writing them downwards is, that the word at the head of each has been selected with a definite purpose, — to introduce some particular combination, &c. To write across the line, then, instead of down the column, would be opposed to our plan of one thing at a time; it would present a variety of combinations for practice, instead of fixing the attention on one, and practising that till it can be written well. The sentences are to be written across the page. If written downwards, a word at a time, the object for which they are designed is defeated, namely, the final training of the hand to write across the page, which brings the lateral movement into practice. The more difficult combinations of letters in words are gradually introduced.

Some of the books will be found to be especially designed for girls, the hand being finer. No. 7, as we have said, contains mercantile forms, and should be preceded by No. 12, in which different forms of current capitals are given. By a slight examination of the different numbers, the intelligent teacher will now fully comprehend the arrangement of our system and the principles upon which it is constructed. The particular character of each of the different numbers will be found in the Introduction.

Having thus considered the plan of the copy-books, we

proceed to the more particular development of the course of instruction which should accompany them. The first point, after giving out the copy-books, is to teach what is needed to be known as to lines. A chapter and a lesson will be found devoted to them. The teacher should begin with thoroughness here. He should determine that every pupil shall know the lines familiarly by their names, and, it might be added, know his right hand from his left. Next in order comes position of the body, arms, and hands. Then, pen-holding. Next, rests. Then, movements. After these, which will be found fully treated of, either in chapters or lessons, sometimes in both, let the first copy be explained. A lesson on it will be found in Part II. Then may follow the lesson on the principles and elements, in which is shown how we seek to impress the forms on the minds of the pupils. If preferred, this lesson may form part of the instruction to accompany the preceding from day to day. When a mental conception has been thus obtained the order of practice is, tracing the copy, writing it on waste paper, ruled like the book both as to horizontal lines and columns, and finally in the copy-book, each of which exercises is performed in concert. All practice should be subjected to constant criticism.

Secondly. The order of the successive steps in teaching execution is, — first, the finger movement to form the letters, combined with the sliding movement of the hand, and the comital of the fore-arm, to keep the pen in the same relative position to each succeeding letter. When this combined movement is perfectly familiar, the muscular and medial may be added to give freedom and boldness. When sentences are written extending across the whole page, the lateral, whereby the whole fore-arm and hand is moved to the right, will become necessary. It is used to

place the rolling-rest in such advanced positions as will render the limited scope of the comital movement always available.

A common and excellent movement for a business hand is to allow the sliding rest to participate in the medial movement, and to form all the short letters by the muscular movement, the finger movement being used only for loops and stems.

We propose now to make a few remarks upon some of these steps. Speaking generally, we would urge upon the teacher to confine his attention during each lesson to one or two things only. For instance, one of the authors of this system occupied the whole time of one lesson with a class, who were writing their first copy in No. 2, in getting them to begin and end the group like the copy. All that appeared written in the copy-book at the close of the exercise was one column. But what a difference between the last line and the first! The first, crowded together, filling only half the width of the column, and of course all the turns and combining lines wrong; the last beginning and ending right, the principles disposed at equal spaces, and a marked improvement in the turns and combining lines. The improvement in a single lesson was astonishing. "One thing at a time" is the true secret of success. All the energy of the will should be directed to the one point selected, and thus a thorough impression made on the children's minds. The points, for instance, that may be taken up separately in the first copy of No. 1 are, that the number of straight lines should be the same; that they touch the top and bottom lines; that they be the same distance apart; that they occupy the width of the column; that the top and bottom be made square; that they be of uniform shade throughout, both individually and in the

group; that they slope alike. Again, in the first copy of No. 2, in addition, that the turns be similar; the connections one fourth the space; and the connecting lines at the beginning and close touch the base and head lines. In No. 4, that they be all of uniform height, &c. We are led to be thus minute from several instances we have met with. A teacher showed us, one day, the copy of a pupil, remarking on the improvement. It happened to be the first copy of No. 1. We said, "The child was not taught to write so, was it?" "Why not?" "You surely did not teach it to make twenty-one straight lines, when there are only twelve in the copy." What was the exclamation in reply? "I never thought of that!"

The "waste paper" should be ruled like the copy, and of good quality, since it is to be used preparatory to writing in the book. Perhaps the most convenient plan is to cut up the same number, or to let the pupil have a duplicate book.

As to selecting books for a course of instruction, for a primary class, and for older pupils, where their hands have been accustomed to hard work, we should recommend No. 1. If they can already write, and the teacher wishes to adopt our method of teaching, he had better take up No. 2. Then No. 3. They have both been newly revised and rewritten. No. 2 is very thorough in its course on the principles, and gives a fine preparation for No. 3. The latter contains the principles, small letters, and capitals with words. These two numbers are essential to our course of instruction.

In teaching the principles of any new letter, always begin by a thorough analysis on the board, and by impressing the form on the mind in every possible way. Then require a minute description in all the particulars from the copy.

Determine to have the principles nearly as well written as the copies, in slope, straight lines, curves, turns, and width, before you leave them. The pupils, now commencing a new study, are docile. They have not yet got any knowledge to set up against yours. Therefore begin your course of instruction at once, and let it be so thorough that they shall throughout be satisfied with it. One of the most sure causes of bad writing is the pupils' hurrying through a book to get into the higher numbers. This arises from a foolish vanity. They would fain believe themselves great, by being occupied with what is great, however unfitted it may be to their then state of progress. Then, again, they can boast to their friends, "I am in No. 12." Whereas, if their No. 12 was seen, it would be imagined that a spider had been bathing his feet in the ink, and then walking over its pages to dry them. It is fatal to all progress. But it is asked, perhaps, Can the children be interested for so long a time in the same thing? It depends very greatly on the teacher. We mention one among many instances that have actually occurred. In a school in the Eastern District of Brooklyn, we have known children to go home and practise at the letter *m* from three o'clock till ten, when their parents sent them to bed, in order to bring a perfect specimen to their teacher next morning. Further, they wrote for a whole year in No. 3, with the utmost contentment. Suppose you start with this idea before your pupils, to see how soon one of their number can bring you a perfect imitation of the copy, say a single group of the first principle, — how soon ten can, twenty, the whole class. Show the successful attempts to those who have not yet succeeded, and bid them look upon them as pledges of their own success. Paste them into a book with the pupils' names attached, as something valuable. Depend upon it,

that as soon as they can see their own marked improvement, there will be no lack of interest. They may be reminded, too, of the number of letters in which that principle occurs, and that thus they are learning it once for all; that in writing words, they are after all only writing letters, and in writing letters, principles; with this disadvantage in both cases, that their attention is distracted by the variety.

In the same way, give most determined and long-continued practice to the groups of letters. In them the pupil's attention is fixed on the form of the letter. In words, he is too apt to fix his attention on the word as a whole, and not on the letters. A superior teacher said to us one day, "I wish your copies were all in Latin or German." "Why?" said we. "Because," he replied, "the children look at the combination as a whole, and do not give the least thought to the letters as they write them. I have often, after they have written a word, told them to write the same word, reversing the order of the letters, putting the last first, and have been surprised to see how much better the letters were formed. You see they had to *think of each letter* then." He was perfectly right. Let the teacher be on his guard against this fault.

So in the capitals, have one written well before another is taken up. Let the pupils know to how many letters the different parts are common, and that therefore, mastering them for one, they master them for all.

In words, dwell much on the commencing and closing slopes; the first sets the pattern, the last shows it has been kept. The loops are very difficult, and the dots in *b*, *v*, *w*, *s*, are apt to be very carelessly written. Make "special hobbies" of these points. Attending to them perseveringly, you will be astonished to see how the rest of the letters will fall into shape. As to criticism, everything will

depend on its thoroughness. Its province embraces all branches of the subject. In the Schedule of Topics prefixed to this chapter, the teacher will find a statement of the particulars on which he is to exercise its power. He should move about among the class during the lesson, and criticise two or three of the points selected from it. Unless there is some glaring neglect or fault, which requires immediate attention, it will be better to take them up in order. As he goes round, he should also notice errors in form, &c., and again on a more particular inspection at the close of the fourth line, for more than this should never be written without examination. The class being stopped, he will draw the faulty forms he has noticed on the board, and call for criticism. Let the hand be raised by those who perceive the faults. When the one selected has stated his point, see how many agree; if right, make the correction, and inquire how many erred thus; then proceed to the next fault. If the teacher is not himself a good writer, let him correct over the error; the want of correctness in his own is then not remarked; it merely serves to notify that that point has been attended to. When they become a little accustomed to criticising, let the points be taken up in regular order. The teacher should then dwell especially on the most prominent fault, and require them to give especial attention to correct it when the writing is resumed.

It seems scarcely worth while to specify what faults the pupils are most likely to fall into. The teacher will discover them but too soon. They may always be looked for on each side of the rule; if a line is to be sloped, it will be sloped too much or too little; if a turn is to be made of a certain shape, it will be too round or too sharp; if a space of a given width, it will be too broad or too

narrow. The critical eye must look on each side of the happy mean.

Let much care be taken to keep the books clean and free from blots. The following fact illustrates the effect of taking care. In the good old times, when the virtues of Dr. Birch were more generally relied upon than at present, there lived an old Englishman, whose name, singularly enough, was Bull. He had two sons. Whenever they fell down, he always gave them a thrashing. It was of no use for them to plead that they could not help it. His rule was invariable. What was the effect? They became the surest-footed boys in the parish. MORAL: Accidents can almost always be avoided.

If the course we have here mapped out seems to involve great labor on the teacher's part, we cannot deny it. A whole class of good writers cannot be formed without indefatigable exertions. But we can assure him who faithfully pursues this method of a success which will most amply repay him. He will find himself, by the remarkable progress made, able to excite an enthusiasm in this branch, which will lead to most astonishing results, as satisfactory to the parents, trustees, and pupils, as they are gratifying to his own just pride.

PART II.

LESSONS.

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LESSON I.

ON LINES AND ANGLES.

We have represented the Class answering as a whole, merely to save space. The Teacher of course will use his own judgment in eliciting replies; selecting individuals, or requiring answers in concert, as he may prefer.

Teacher. (Drawing a straight line on the board.) What is that? Class. A line. T. (Drawing a curve line.) And that? C. A curve line. T. They are both lines, then? C. Yes, sir. T. How did I make them? C. By drawing the chalk along on the board. T. If I touch the board thus with the chalk, what do I make? C. A dot. T. (Making another dot close to it.) And that? C. A dot. T. Making several dots nearly touching.) What are those? C. Dots. T. If they touched one another, what should we have? C. A line. T. If a dot then kept moving along and marking its footsteps, we should have a line? C. Yes, sir. T. Now you know what a line is. A line is the path of a moving dot. Are these two lines alike? C. No, sir. T. What is the difference? C. One is straight, the other curved. T. A straight line is where the dot keeps moving in the same direction. A curve or curved line is where it constantly changes its direction. (Drawing a crooked line.) What

is that? C. A crooked line. T. If you examine it carefully, you will see that it is made up of curves and straight lines. It is compound, not simple. You must remember that a curve may be very short. There are only two kinds of lines, straight and curved. Now, mind and recollect the definitions of them and of a line. (The Class may here give them.) T. (Drawing a horizontal straight line.) What is that? C. A straight line. T. Why is it? C. Because the dot moved in the same direction. T. (Drawing a vertical straight line.) That? C. A straight line. T. Why? C. (As before.) T. (Drawing one obliquely.) That? C. A slanting line. T. Is it a straight line? C. No, sir. (This actually occurred: a vast majority of children think that only horizontal and vertical lines are straight.) T. Is it crooked. C. No, sir. T. Is it curved? C. No, sir. T. What is the definition of a straight line? C. (Give it.) T. Did the dot move in the same direction in forming that line? C. Yes, sir. T. What is it, then? C. A straight line. T. (Drawing a number of straight lines radiating in all directions as from a common centre, but all separate.) What are all those? C. Straight lines. T. Does it make any difference what direction they are in? C. No, sir.

T. Do you know what a form the shape of an egg is called? C. An oval. T. Why? C. From the Latin name for an egg. T. (Draws the shape of an egg upright, and by two horizontal lines cuts off about a fourth at top and bottom, pointing to the four sections of the line.) Which kind of line are these? C. Curves. T. Do they all curve alike? C. No, sir. T. Which curve most? C. The top and bottom. T. Do they curve alike? C. No, the top curves most. T. Do the sides curve uniformly throughout? C. No, the lower part bulges out. T. The

o val in writing is so named, because it has long sides and narrow ends, like the egg. But it differs from the egg shape in this, that the curves of the sides are uniform throughout, — there is no bulge; and both the ends curve alike, — one is not narrower than the other. It is termed an elliptical oval, because it derives these peculiarities from a mathematical figure called an ellipse. (Draws such an oval upright, sloping both ways and horizontal.) (Review.)

T. Have any of you got knives? C. Yes, sir. T. Get them out. Open the blades a little way, till you get them where they will not spring to. Very good. Hold them up, backs downwards. What name do you give to the opening between the blade and the handle, which we see when we look at any one of the knives sidewise? C. I don't know any name for it. T. Would you like to have one? It is an angle. How did you make it? C. By opening the blade. T. Did you lift the blade right out, both ends alike? C. No sir. I lifted one end, the other won't move. T. Why not? C. There is a pin through it. T. Very well. Now put your knives up and look at the board (pointing to the straight line). Suppose this line was your knife; now if I could move it round one end, lifting this right-hand end up, and leaving the other fixed as if it had a pin through it, and stop as you did in opening your knives, I should make just such an opening or angle as you did. I will mark the new place the line is supposed to have moved to. (Marks it.) Do you see the angle between the line in the old and in the new position? C. Yes, sir. T. Did any of you open your knives wider than that? C. Yes, sir. T. Then you made a greater angle. Remember the size of the angle depends upon how wide the knife is open, not upon how long the blade and handle are.

(Lengthening the sides of the angle a good deal.) Is this angle any larger than it was before? C. (Divided in opinion.) T. Suppose it was a knife, is it open any wider than it was before? C. No, sir. T. Is the angle larger? C. No, sir. T. (Drawing a short line, making a larger angle with the original line.) Suppose the line had moved up to here, would the angle be larger? C. Yes, sir. T. (Making in another place several angles of different sizes, among them an obtuse angle with very short lines, and an acute angle with very long ones.) Which is the larger of these two? C. (Smiling.) The one with the short lines. T. How is that, — it is farther across here (between the ends of the acute angle) than there (the obtuse)? C. Yes, sir, but the knife is not opened so wide. T. Very well. An angle, then, is the inclination of one line to another at the point where they meet, or how much one slopes to the other. Now, how shall we measure an angle? If you want to measure a line, you find out how many inches long it is from one end to the other; but where can we measure across in the angle. (Draws an acute angle.) If I measure across from this end to that end it would be about how much? C. Three inches. T. (Lengthening the lines.) Now. C. Six inches. T. Is the angle any larger. C. No, sir. T. Why? C. The knife is not opened any wider. T. Is this a knife? C. No, sir. T. What would you say of these lines, then? C. The line has not moved up any higher round the fixed point. T. You see, then, that we must find some other way of measuring it. It will never do to say an angle is three inches wide and at the same time six inches wide. I will show you. If I moved this line right round, keeping one end fixed, till it came back where it was before, what figure would the free or moving end of it describe?

(Illustrates with a piece of stick or chalk.) C. A circle. T. (Draws a circle. Lengthens the line, producing it beyond the circle.) Now, if I moved the line round in the same way? C. A larger circle. T. (Draws the circle and repeats the same thing once more. Then draws a line to form an acute angle, cutting the three circles.) This angle is the same size, whether the lines extend to the first, second, or third circle. C. Yes, sir. T. Now, we suppose every circle to be divided into 360 equal parts. (Completes the horizontal diameter.) How many degrees in half of it? C. 180. T. (Marking the quarter at top.) How many in a quarter? C. 90. T. How many in a quarter of the first circle? C. 90. T. Of the second? C. 90. T. Of the third? C. 90. T. Are the degrees the same size? C. No, sir. T. You see that they are of different size in each circle. But whatever size they are, 90° means 90 equal parts out of 360 equal parts. Now, this angle I have drawn takes in half of a quarter of the circles. How much is that? C. 45°. T. Is it 45° on each of the circles? C. Yes, sir. T. What does that mean? C. 45 equal parts out of 360. T. Then it does not matter where I draw the circle. I divide it into 360 equal parts, and then from the centre draw lines to contain as many degrees between them as the angle requires. It makes no difference in what direction the angle is drawn, only it must have the right number of degrees. Suppose you wished me to draw an angle of 60°: I draw a straight line: then a circle with the end of the line at which I wish to make the angle at the centre (draws it). Then I must divide the circle into 360 equal parts. But as that would take a long time, I will manage it this way. How many degrees in a quarter of the circle? C. 90. T. How many in a third of 90? C. 30. T. How many in

two thirds? C. 60. T. Just what I want. Two thirds of this quarter will be 60. (Marks off two thirds and draws the line to form the angle.) What sized angle is this? C. It is an angle of 60°. T. (Draws an angle of 45° with rather short lines.) I want to measure this angle, what must I do? C. Draw a circle with the point of the angle at the centre. T. (Draws it, making the circumference beyond the ends of the lines.) What am I to do now? C. Make a smaller circle. T. But I want to measure on this circle. C. Make the lines longer. T. Will not that make the angle larger? C. No, sir. T. (Lengthens the lines.) How large is the angle. C. It contains about half of the quarter between the lines. It must be about 45°. T. Very good. (Draws the horizontal diameter, and a line from the centre to 90°, writes 0 at the right-hand end, 90 at the top, and 180 at the left hand.) How far from 0 to 90? C. 90°. T. From 180 to 90? C. 90. T. Are these angles both the same size? C. Yes, sir, both are angles of 90°. T. If a line then makes an angle of 90° with another, what angle will it make on the other side? C. An angle of 90°. T. Why? C. Because the line has moved just halfway. T. Two lines that make an angle of 90° are said to be perpendicular to each other. And as this (pointing to 90) is the vertex or top, a line perpendicular to a horizontal one is called also vertical. The angle of 90° is called a right angle, and therefore, as the perpendicular line makes an angle of 90°, or a right angle on each side, it is said to be at right angles to the other line; or, they are said to be at right angles to each other. T. Can a line standing alone be perpendicular? C. No, for there is no line to make the angle of 90° with. T. Can it be vertical? C. Yes, because the horizontal line is supposed where it is

not drawn. T. Is a vertical line always perpendicular? C. Yes, perpendicular to a horizontal line drawn or supposed. T. Is a perpendicular line always vertical? C. No, only when the line to which it is perpendicular is horizontal? T. What are parallel lines? C. Lines which are everywhere the same distance apart. T. Can more than two lines be parallel? C. Yes, any number. T. (Illustrates on the board.) Can curve lines be parallel? C. Just as well as straight lines. T. (Draws horizontal, perpendicular, vertical, oblique lines, &c., and asks their names. He then requires the pupils to draw the lines as he names them. When they are perfectly familiar, he practises them in drawing an angle of 90°, then of 45°.) I want you to fix the angle of 45° in your minds as a standard. The main slope of the writing in the copy-books is 50°, — see how much more that is than 45°; and the connecting lines in the letters slope 35°, — see how much that is less than 45°. (Then he should give them practice in drawing angles of 50° and 35°.)

It is hardly necessary to remark, that there is matter enough here for several lessons. They should be ungrudgingly devoted to it. It will be found to pay well in the end.

LESSON II.

ON MOVEMENTS.

TEACHER. I have already told you how I wish you to sit, to place your arms and hands, and to hold your pens; you are now to learn how to use your pens. The first thing of all is to hold it as lightly as you possibly can. If you grasp it tightly, you will not only make cramped letters, but you will make your hands and arms ache. Fancy that it is a tube of very thin glass, and that, if you squeeze it, you will crush it in pieces. (Here go through the drill for commencing an exercise, to the point where they take and adjust their pens.) Now place your pens on the top line, in the middle of the page, your forearm and hand at right angles to the horizontal lines, and in the same line as the vertical ones. When I say, Up, keep your elbows on the desks and raise your hands straight back, without bending your wrists or moving the pen in your fingers, till your hands are as far back as your face. When I say, Down, lower your hands without bending your wrists, so that the pens may come in the middle of the top line again. Mind and do it all together. Be sure to keep the muscles relaxed. Are you ready? Up. Down. (Slowly.) Up. Down. (If the pupils are sitting with the right side, absolutely and without compromise, turned to the desk, the teacher can walk across the front and see every movement in the file.) Up. Down. (Correct those who are wrong, hasty, careless, or tardy. Let the motion be moderately slow.) Up. Down. (Continue till it is accu-

rately done by all.) Place your pens now at the left end of the same line. Which line is it? CLASS. The top line. T. When I say, Over, raise your hands and fore-arms, resting on the elbows as before, and not bending your wrists or moving the pens in your fingers, move the pens across over the line, and put them down on the right-hand end of the line. Do not lift your hands very high, but do not let the pen touch the paper. Move at a moderate rate, — not very fast or very slow. When I say, Back, bring the hand back in the same way, and put the pen on the left end as before. Ready. Over. Back. (The teacher should see that all do it with precision. Extreme precision, the whole class moving as one, is the true secret of keeping the attention of the pupils and making them feel interested. Call out the very awkward ones, not telling them the reason, to stand a moment beside you, and see how beautiful the movement in concert is, and how any deviation spoils it. Continue till the class is perfect. Correct faults of position and pen-holding in the mean time.) Over. Back. Pen in the middle of the page. How many are crushing it? How many have got it below the knuckle? Ready. Up. Down. (Three or four or a dozen times.) Pen at the left end. Ready. Over. Back. (Several times.) Now just raise your pens from the paper, and move your elbows, fore-arms, and hands a little nearer to you, so as to have them opposite the middle of the *left half* of the page. Notice where the middle of the page is, and when I give the word of command, move the pen and place it on the middle of the line, instead of on the right end. Pens on the left end. Ready. Over. Back. (Several times.) If I say, Hand in the middle of the page, — I want you to move your whole fore-arm, elbow too, to the position you had at first. When I want you as you are

now, I shall say, Hand for first half, — and then the movement will only be as far as middle. Over. Back. (Several times.) Hand in the middle of the page. Pens to left end. Over. Back. Pens in the middle. Up. Down. Hands for first half. Pens to left end. Over. Back.

Teach them to move across the right half of the page, having first moved the fore-arm and elbow opposite the middle of it, in the same way. Then take the left column, let the arm be placed opposite the middle of it. Here, as the space to be crossed is so narrow, show them how to slide across from left to right on the corners of the nails of the third and fourth fingers, and on the bed of muscle in front of the elbow, which we have named the Rolling Rest. On this the whole fore-arm should move to the right with the hand, as it travels on the sliding rest. (See Chap. V.) Then bid them raise the hand to come back. It may be well to change the first word, and say, Slide, instead of Over. See that the wrists do not touch the desks. Watch the pen-holders, that the hand is not rolled over. Impress again and again on their minds that the penholder must always be parallel to the vertical lines, and in a line with the fore-arm. Tell them that the only reason of moving the elbow and fore-arm for the different parts of the copy, is to keep it so. When they have practised well on the top line of the column, Slide, Back, let them, at the word Back, bring the pen to the left end of the next line in the column; this will show them the necessity of moving the book forward, which may be done every four lines, at the word, "Move up books." The judicious teacher can occupy part of the time with an exercise on movement after this model, and part with the study of the principles and elements, so that by the time the above

movements are thoroughly learnt, and the pupils have become somewhat accustomed to their pens, they will have arrived at that stage in the study of the principles that they are ready to learn the finger movement, and to trace preparatory to writing. Do not go on to tracing till you have got the position, &c., and these movements accurate. Keep the class to extreme precision of execution; you will find the discipline acquired invaluable. Without discipline you can never make a whole class of good writers. The great hinderances to progress are inattention and slovenly execution. Such a drill as is here proposed arouses the attention, develops the power of fixing it steadily on a given object, and counteracts till it cures slovenliness. By such means, a fine class zeal also may be called into action, so that each individual will strive to distinguish himself as a portion of the harmonious whole.

When the finger movement has been thoroughly learnt, and the pupil can execute letters handsomely by means of it, at the same time moving the hand across equally on the sliding rest and the fore-arm on the rolling rest to accompany it, giving the sliding and comital movements, it will be time to teach the muscular and medial movements; that is, the play backwards and forwards of the fore-arm on the rolling rest, and the consequent movement of the hand, enforcing the movements of the pen-fingers.

LESSON III.

ON ELEMENTS AND PRINCIPLES.

CHILDREN will value knowledge when they feel the need of it. It should be the teacher's object, therefore, to make them feel the need. Again, when the parts of a compound object, which, as a whole, is significant, are by themselves non-significant, children will be more interested by the analytical than by the synthetical method. They know the whole, and their attention is naturally aroused, when they see it separated and the unfamiliar parts examined. Analysis should therefore precede synthesis. On these maxims we base our instructions.

TEACHER. I am going to make the small letter *u* on the board. (He draws a *u* without the first hair line, with the first part wrong and the last part right. The children smile.) T. What is the matter? PUPILS. It is a bad one. T. Is it all bad? P. No, sir. T. Which part is bad? P. The first. (The teacher points to the first down-stroke.) T. You mean this? P. No, all the first part. T. But it is all joined together, which is the first part? P. (A little puzzled.) Up to the top of that piece, — the second piece. T. Suppose I make it again, and do you notice where my hand stops. (He writes it again, and they notice that it stops when the upper line is reached and at the end.) T. Now, then, we will call the piece before each stop one part. T. How many are there? P. Two. T. How many are alike? P. Two. T. Then, instead of calling it first part and second part, would it not

be a good thing to have a name for it, so that, when you tell me what is wrong, I shall know what you mean? P. Yes, sir. T. We will call it a Principle. Principle means a thing that begins, that is taken first. Now, this part had to be thought of first before the letter *u* was made by putting it over twice. We will call it the First Principle. How many parts has the *u*? P. Two. T. How many principles has it? P. One — Two. T. (Pointing.) What principle is this? P. The first. T. (Pointing to the other.) And this? P. The first. T. How many principles, then? P. One. T. Right, — one principle repeated. T. (Writes an *m* on the board.) Do you see the first principle there? P. No, sir. T. (An *a*.) Now? P. Yes, sir. T. Where? P. In the *a*. T. (*i*, *w*.) Now? P. Yes, sir. T. Then it is found in other letters? P. Yes, sir. T. Does it change its name? P. No, sir. T. Then you know what the first principle is? P. Yes, sir. T. (Cleaning the board.) What is it? Hands up, when you are ready to answer. (Two or three come up rather slowly.) T. John. J. It is the first part of *u*. T. Yes, but suppose I don't know how to make *u*, how shall I know what the first principle is? Mary. M. It is that thing you showed us on the board. T. But suppose, when you go home, your mother asks you what you learned at school, and you tell her that you learned about the first principle, and then she asks you what it is, your answer would not make it very clear to her, —would it? M. No, sir. (A hand is now shaking with anxiety for a hearing.) T. Well, Henry. H. It is a bent line. T. (Making a bent line.) Is that it? H. No, sir. T. Watch me very carefully as I make it, and perhaps you will be able to find out what it is. (Draws the straight line on the right slope.) What is that? P. A straight line. T. (Leav-

ing a little blank space, as in the diagram, Plate I., and making the turn.) And that? P. A turn. T. (Leaving another blank space, and completing with the curved line.) And that? P. A curve. T. Now, then, what is the first principle? P. It is a straight line, a turn, and a curve. T. (Making it wrong side up.) P. No, both ends up. T. (Draws it upright.) P. No, slanting. T. (Makes the first part shortest.) P. No, both the same height. T. (Drawing both the same slope.) P. No, the second part slopes more than the first. T. (Draws it right.) Well, there it is at last. I will not ask you just now what it is. We will talk a little more about it first. How many parts are there in it? P. Three. T. We will call these parts, which make up the Principle, Elements. (Draws *m*, *n*, *w*.) Is the first part of *m* like the first principle? P. Yes, only it is turned over. T. Very good. We use a fine name, Inverted, which is from the Latin, and means turned over. It is the Second Principle. Has it the same parts? P. Yes, curve, turn, straight line. T. Does the curve bend the same way? P. No, sir. T. Is the bend of the turn the same way? P. No, sir. T. Does the straight line slope the same way? P. Yes, sir. Now I will draw a straight line. (Draws it with the right slope.) That is the first element. I will arrange the others, and we will see what we get. What came after the straight line in the first principle? P. The turn. T. (Draws the lower turn of an oval, like that in the diagram, Plate I., with both sides adapted to the oval, and the ends terminating on an oblique line.) What next? P. A curve. T. (Draws the right side of the oval, leaving a little blank.) What next? P. That was all of the first principle. T. Well, how did the second principle begin? P With a curve bending the other

way. T. (Draws the other side of the oval.) What next? P. A turn opposite to the other. T. (Draws the upper turn of the oval like diagram.) What did we name all these separate pieces? P. Elements. T. What figure do these four together make? P. *O*. T. Yes, an *o* or oval, so called from its being the shape of an egg. You see I have drawn here a straight line and an oval, and these contain all the elements. Let us number them. (Points to straight line.) P. One. T. (Points to lower curve.) P. Two (and so on). T. How many elements are there? P. Five. T. Yes, and you must learn to know them by their numbers. Thus, (placing them separately on the board like the diagram, the sides like those in the turn of the principle, and the ends terminating on a horizontal line,) E. 1, E. 2, &c. It is convenient also to have names for them; thus, Straight Line, Upper Curve, Lower Curve, Right Curve, Left Curve. Do you notice any difference between this E. 2, which I have just drawn, and the lower curve in the oval. P. Yes, sir. T. What is it? P. The ends of it are level in E. 2, and one is higher than the other in the lower curve. T. I will explain this to you, and I want you to pay very close attention. We shall often have to speak of the height of the principles and letters; when we do so, we mean their vertical height; (draws a vertical line beside the oval,) these four lines (see diagram) divide it into four equal spaces, and we make the ends of E. 2 come up to one of these lines, that we may see how much of the principle or letter it takes up. How much does it? P. One fourth. T. Very good, one fourth on each side. Now, attend again. What kind of line is the left side of the lower curve joined to in the oval? P. To a curve. T. What in the principle? P. To a straight line. T. In order to make

the lower curve of the oval one fourth, and to adapt it to the straight line, we shorten the left side and modify it, that is, make a change in it to suit the straight line. You notice that the left side of the principle slopes more than the left side of the oval; so, to adapt the left side of the lower curve of the oval to this curve with increased slope, we modify it by sloping it a little more, and we lengthen it a little, so as to make it one fourth of the principle. The actual turn in the oval is retained, but both sides of it are modified. The turn in the oval is the ideal form; it gives us the idea, we modify it to suit the cases in which it is used. The same modifications are made in the upper turn, when that is to be adapted to a straight line and a curve with increased slope in a principle. But I have a word or two more to say about this P. 1. Does one side slope more than the other? P. Yes, sir, the right side. T. What do you suppose that is for? I will show you. (Draws a Roman u and n.) How many straight lines are there in each of these letters? P. Two. T. How many turns are there in each? P. One. T. How then, can you tell one letter from the other? P. In the u the turn is below, in the n above. T. What do you think the turn is used for? P. To join the two straight lines. T. Yes. Now notice the difference between the Script or written letter and the Roman or printed. The straight lines, instead of being vertical, are sloped; it is easier to write them so. (Makes two straight lines on the same slope, twice over.) Now I want to join these two lines. If I do so at the bottom, I shall have *u*, if at the top, *n*. Can I join the bottom of one to the top of the other by a line on the same slope? P. No, sir. T. (Draws the line without any turn.) Will it have more, or less slope? P. More. T. What is this line used for? P. To join the other two.

T. Do you know any other word for join. P. Conneet. T. Very good, we eall this line the Connecting Line, and you now see why it must have more slope than the other or main lines. Is the first part of this *u* (the angular one he has just now drawn) like the first prineiple? P. No, sir; P. 1 has a turn. T. Which has most beauty, the eurve for a turn or the angle? P. The curve. T. Certainly. You see, then, that the straight line is the main part of this prineiple, and this line of greater slope is merely used for eonnection, and the eurve to join the main and the conneeting lines together, and add the eharaeter of beauty. But what kind of a line is this (pointing to the eonnecting line in the angular *n*)? P. A straight line. T. Whieh is most beautiful, a straight line, or a curve? P. A curve. T. Which would it be most natural to eontinue the curved side of the turn with? P. A curve. T. Therefore we use a eurve. The eonnecting lines are all eurves. I want you particularly to remember the distinction between the main lines, which are the essential parts of the letters, and the turns and eonnecting lines, whieh are adjuncts or accessaries, because, as you have seen, the main lines have one slope, 50° from the base line, and besides that, are all written downwards, exeept in the second part of three letters, *b*, *v*, *w*, while the connecting lines are all written upwards and have another slope, 35°; this varies, however, when two eonnecting lines run into one another in the combination of letters. One or two more questions, and I think you will know all about the first principle. How much of the principle does E. 2 take up on eaeh side? P. One fourth. T. How much E. 1, then? P. Three fourths. T. How much E. 3? P. Three fourths. T. Which side of the principle is the higher? P. They both end on a horizontal line. T. Since you are too

young as yet to put what you have now learned in a good shape, I will sum it up for you.

Letters consist of principles.

A Principle is a primary section or part of a letter, and consists of elements, which are the secondary sections or parts of a letter.

The first principle consists of E. 1, on the slope of 50° from the base line, continued through three fourths of the height; E. 2, occupying one fourth; and E. 3, on the slope of 35°, occupying three fourths, and ending at the head line.

In penmanship, Analysis is the resolving or separating compound forms into simple ones.

Primary Analysis is the resolving or separating a letter into its principles.

Secondary Analysis is the resolving or separating a letter into its elements.

Criticism is the examination of forms by definitions and rules.

The teacher should next teach them to apply the definitions in criticism. Draw the four lines as before. Write the first principle with E. 1 too short, then E. 3 too short, E. 1 and 2 with wrong slopes, E. 2 too round and too sharp, &c. The pupils will thus at length acquire a thorough mental conception of the given principle, and the definition will become to them a living power, instead of a mere lifeless form.

LESSON IV.

ON FIRST COPY.

TEACHER. What are you going to do? CLASS. To write. T. What on? C. On the copy-book? T. What on in copy-book? C. On the ruled lines. T. What kind of lines are they? C. Straight lines. T. How many different positions are the ruled lines in? C. Two. T. What are they? C. Horizontal and vertical. T. Which are you going to write on? C. On the horizontal. T. Do you notice any other position of straight lines on the page? C. Yes, the straight lines of the principles are oblique. T. You may call each collection of principles at equal distances a Group. What do the vertical lines divide the page into? C. Into columns. T. What are the vertical lines for? C. To separate the groups. T. What is the relative position of the horizontal lines? C. They are parallel. T. What else do you observe, as to their relative position? C. Two are near together, and then the space between is greater. T. What is that for? C. That we may write between the narrow spaces, and make the principles of the right height. T. Will they be of the right height if you do not make them touch both? C. No, sir. T. Then you must be very careful to attend to this. When principles are joined together to make letters, they are said to be connected; when principles are joined together independently, as in these groups, and when letters are joined together, they are said to be combined. In the copy at the head of the first column, what principle is written?

C. The first. T. Is it single or combined. C. Combined. T. Which is the main stroke in the principle? C. The first element. T. How is the combination made? C. By the turn and connecting line. T. What kind of a join is there? C. The end of the connecting line touches the top of the next principle. T. How far, do you think? C. One fourth of the height. T. This kind of join is called a connection. What is the first element? C. A straight line. T. What is a connection? C. The joining of a connecting line to a straight line. T. How long is a connection? C. One fourth. T. Is that a long or a short distance? C. Short. T. Is it longer or shorter than the part of the first element which is not touched? C. Shorter. T. How much shorter? C. One half. T. How is that? I thought you said just now it was one fourth. C. Yes, sir, one fourth of the height of the principle, but you asked, "How much shorter than the part of the first element not touched?" The first element is three fourths of the principle, one fourth is touched, so that twice as much remains untouched. Therefore the part touched is one half shorter than the part untouched. T. Very good, indeed. I am glad you were not caught there. What I want to fix on your minds is the shortness of the connection, one fourth of the space; so that you may not make it three fourths, as many careless persons do. What are we talking about? C. The connection. T. How many things did we notice before this? C. The ruled lines, their position and relative position, where we are to write, that the principles in the copy are combined, that we must be sure and make them touch both the upper and lower line. T. Very well. What came next? C. The connection. T. Is that the same as the combination? C. No, sir; the combination is the way independent principles or letters are joined to-

gether; the connection is the way a connecting line and a straight line are joined together. T. What is the slope of the main lines in the principles? C. 50°. T. Of the connecting lines? C. 35°. T. Which has most slope? C. The connecting lines. T. Then take care and make them so. Do not run them up parallel to the main lines. T. Do all the main lines in the copy have the same slope. C. Yes, sir. T. And all the connecting lines? C. Yes, sir. T. Now I want to know where the copy begins? C. Near the vertical line. T. Where does it end? C. Near the next vertical line. T. Is that a pattern for you? C. Yes, sir. T. Which will be the hardest to get it right at, the beginning or end? C. At the end. T. Why? C. Because we can put the pen down in the right place to begin, but — T. If you get the principles too near or too far apart, they will come out wrong at the end. Is that what you mean? C. Yes, sir. T. How many times is the first principle written in the copy? C. Five times. T. Are they all the same distance apart? C. Yes, sir. T. Observe that distance carefully, and try to make yours the same. Now take the position I gave you, and your pens. Mind and hold them properly. Very gently, — don't squeeze them. Now we will trace the copy. By that means your fingers will get used to the right movement, and you will become familiar with the form of the principle. (The teacher can first trace the copy on the board a few times. By beginning in the wrong place, going out of the track, &c., &c., and requiring them to count for him and criticise, he can teach them exactly what the "tracing" is to be.)

Count for them at first, and have the motion slow and uniform, deliberately down, round the turn and up. Count one for the introductory connecting line, two for the down-

stroke, one up, two down, and so on. See our method of commencing an exercise in the chapter on Drill. While they are tracing, correct position, pen-holding, and movements. Do not be discouraged. Remember your own first efforts with a pen. It is a task of great difficulty, and requires surpassing patience, to drill all those little unskilled hands. Encourage those who have the least natural ability. Praise those who first do well. Assure the others that it is a pledge of their success. Some are beginning to triumph already. From the first, insist on perfect discipline, obedience, and attention. A sure success will attend your labors.

LESSON V.

ON THE SMALL LETTERS.

If the principles already given have been thoroughly mastered, their varied combination in letters presents little difficulty. Still it may be desirable that we should present a specimen of our method of teaching the letters. Let it be remembered that the two great objects of the teacher should be, to lead the pupil to see all there is in the copy, and to so impress it on his mind, that he may have a vivid mental conception of the forms to be written. He ought, in fact, to see the imaginary forms on the paper when he writes, and then the pen goes over them. If there is any reluctance on the part of the pupil to continue long practising on the principles, remind him that writing letters is only making those same despised principles. Let there be much practice on waste paper, ruled like the copy-book. The same number can be cut down the back and through the middle of the page vertically, and given out as needed. About four or eight lines can be written in the copy-book in one column, as a result of the day's lesson. By this means, when one book is written through, the pupil will really have written through five or six, without knowing it, and the handsome appearance of his copy-book and the marked improvement on page after page will render him satisfied and his parents content. It is well sometimes to be "crafty and catch with guile." As an old writer says, "We must have the eye of the serpent, only take care that it is set in the dove's head." Remember

that, if you yield to the pupil's desire to hurry over the principles and get into the letters, you will find him equally anxious and pressing to get out of the letters into the words, out of the words into the sentences, out of the sentences into the book of mercantile forms, and then "Ho for No. 12 and the fancy capitals!" Interest the pupils, therefore, with all power, in the principles. See who can bring you the handsomest group written out of school; let them compare them and judge themselves; paste the handsomest two or three every day into an old copy-book with the pupils' names to them; if an Assistant in a school, request the Principal to come in and see how they are getting on; show him the selected specimens, and let him express his approval. You may thus awake an interest, an excitement, and a healthful emulation, which will make your class a model one, and make a good penman of every individual. We speak from what we have seen again and again. If there is some repetition in saying this, we care not. It is of such vital importance. And we are meeting a real difficulty. It arises not from the children only, but also from the parents. A case in point occurred not long ago. One of our agents took partial charge of an advanced class in a public school in a city. The writing was very *mediocre*. He put them into No. 3, and he stuck to it. He would not go on from the principles till the whole class could write nearly as well as the copy; nor the letters, till the same end was achieved. One of the pupils told him afterwards, that at first her mother was much dissatisfied and ridiculed the idea. "Why," said she, "when *I began* to write at school, I wrote pothooks and hangers, and now you, on this new-fangled system, after writing sentences, are put back into them." Two months later the mother saw her daughter's writing. She was no longer

dissatisfied. "Well," said she, "I must admit that your improvement is wonderful." Be assured, then, that the rapid improvement will justify the wisdom of the method, and remove all feelings of discontent on the part of both pupils and parents. And by no other method can such rapid improvement be made.

TEACHER. Having now mastered the first three principles, we are going to *apply* the first principle in a letter. I want you to think of each letter as a little gentleman that wishes to have his portrait taken. The principles are his features, which are learnt separately, just as an artist learns to draw a nose, an eye, a mouth, before he attempts a face. The gentleman is very patient, and will sit to have his likeness taken as often and as long as you wish; but his beautiful face will put you to shame till you get a good one. (He makes a group of *u*'s on the board, like the copy, page 4 of No. 2, or page 1 of No. 3, having first drawn the horizontal and vertical lines.) What letter is this? CLASS. The letter *u*. T. We have to fix our attention, then, on the letter *u*. How high is it? C. One space, the same as the distance the lines are apart. T. How wide is it? C. One space, the same as the height. T. Give me the primary analysis of the letter, and I will write it. C. The letter *u* consists of P. 1 + P. 1. (The teacher writes *u* = P. 1 + P. 1.) T. Now I will write the letter according to your analysis. (He writes the *u*, without the first connecting line.) Is that right? C. It is according to the analysis, but we forgot the first connecting line. We ought to have said *u* consists of E. 3, c. l. + P. 1 + P. 1. (The teacher makes the addition.) T. Now the secondary analysis. C. *u* consists of E. 3, c. l. + E. 1 + E. 2 + E. 3, c. l. + E. 1 + F. 2 + F. 3, c. l. (The formula will appear on the board

as it is in the chapter on Analysis of the Letters. The teacher may also draw the letter, dividing it into elements by leaving blanks.) T. How many elements are there in it? C. Seven. T. What number of similar elements? C. Two of E. 1, two of E. 2, and three of E. 3. T. Which are parallel? C. The three of E. 3 and the two of E. 1. T. Which are sloped most? C. The connecting lines. T. How are they joined to the main lines? C. By connections. T. How many curves, straight lines, turns, and connections? C. Three curves, two straight lines, two turns, and two connections. T. Which are the main lines or essential parts of the letter? C. The two straight lines. T. Which are the adjuncts or accessories? C. The turns and curves. T. What are the characteristics of *u*, or those features which distinguish it from all other letters? C. Two straight lines with turns below. T. Is there any other letter which has two straight lines as its main lines? C. *n*. T. How do we distinguish them? C. The turns are above in the *n*, below in the *u*. (See chapter on Classification of Letters.) T. How many *u*'s are there in this group? C. Three. T. Do you notice any difference between this group of *u*'s and the group of first principles you wrote? C. The principles were all the same distance apart; here the *u*'s are farther apart from one another. T. What do you think that is for? C. To distinguish them more easily. T. Are they so written in words, when they happen to come together? C. No, sir. T. Where does the first c. l. of the copy begin? C. On the base line. T. Whereabouts on the base line? C. Near the vertical. T. Where does the last c. l. of the copy end? C. On the upper line near the next vertical. T. What is the slope of the first c. l.? C. 35°. T. Of the next? C. 35°. T. Of the next? C. More. T. How is

that? C. The next *u* is farther off than the two parts of the *u* are from one another. T. Is the slope of main strokes changed? C. No, sir. T. You see, then, that in the letters the slope of the c. l. is always the same; but when it is used for combining, its slope is modified to suit circumstances. T. To which letter does the c. l. between the two *u*'s belong? C. Half to the first, half to the second. T. How do they unite? C. By running into one another. T. As this line has a different slope, what name may be given to distinguish it? C. Combining line. T. What is the difference between the connecting and the combining line? C. The connecting line belongs to one letter, the combining line to two letters; the one introduces or joins principles, the other joins letters. T. Let us now go through the letter, naming the elements, connections, and turns, in order, and the portion of the space occupied by each. C. E. 3 through the whole space on the slope of 35°, E. 1 three fourths, connection one fourth, turn E. 2 one fourth, E. 3 parallel to previous E. 3 three fourths, E. 1 parallel to previous E. 1 three fourths, connection one fourth, turn E. 2 like previous E. 2 only the right side is a little more sloped, E. 3 increased slope because the next *u* is farther off. T. Now, if you wish to write well and to make rapid progress, you must think, *think*, THINK of all these particulars, each as you come to it. In the end, you will be able to write mechanically, just as you read; that is, without consciousness of the parts of which the compound object, be it word or letter, is composed. From what has been said, you will notice how very important the first c. l. and main stroke are, because they set the slope to the rest. We will now trace the copy, and, as you trace, think.

On the next page will be found a summary of the topics successively taken up in this lesson.

Topics.

The Letter
1. Height.
2. Width.
3. Primary analysis.
4. Secondary analysis.
5. Number of elements.
6. Number of similar elements.
7. Connections.
8. Main lines and adjuncts.
9. Characteristics
   - Similar.
   - Distinguishing.

The Copy
1. Number of patterns.
2. Beginning.
3. Ending.
4. Combinations.
5. Slope . . .
   1. Of main lines.
   2. Of connecting lines.
   3. Of combining lines.

Summary. Recitation of the Elements, Turns, and Connections in the order in which they occur, and the portion of the space or spaces occupied by each.

Tracing. Writing . . . . .
1. On waste paper.
2. On copy-book.

Criticising
- Position.
- Movement.
- Writing.

Specimens of Primary and Secondary Analysis.

$$\text{u} = \text{E. } 3 + \text{P. } 1 + \text{P. } 1$$
$$= \text{E. } 3 + (\tfrac{3}{4}, \textit{E.}\ 1 + \tfrac{1}{4}, \text{E. } 2 + \tfrac{3}{4}, \text{E. } 3) + (\tfrac{3}{4}, \textit{E.}\ 1 + \tfrac{1}{4}, \text{E. } 2 + \tfrac{3}{4}, \text{E. } 3).$$

Height = 1 space.

m = P. 2 + P. 2. + P. 3
= ($\frac{3}{4}$, E. 4 + $\frac{1}{4}$, E. 5 + $\frac{3}{4}$, *E.* 1)
+ ($\frac{3}{4}$, E. 4 + $\frac{1}{4}$, E. 5 + $\frac{3}{4}$, *E.* 1)
+ ($\frac{3}{4}$, E. 4 + $\frac{1}{4}$, E. 5 + $\frac{1}{2}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$, E. 3)
Height = 1 space.

a = (E. 4 + P. 4) + P. 1.
= {E. 4 + ($\frac{3}{4}$, *E.* 4 + $\frac{1}{4}$, *E.* 2 + $\frac{1}{4}$, *E.* 3 + $\frac{1}{2}$, *E.* 1}
+ ($\frac{3}{4}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$ E. 3).
Height = 1 space.

b = P. 5 + (P. 1 + dot + c. l.)
= ($\frac{1}{3}$, E. 3 + $\frac{2}{3}$, loop + E. 1) + (P. 1 + dot + c. l.)
= {$\frac{1}{3}$, E. 3 + $\frac{2}{3}$, (E. 3 + E. 5 + E. 4) + E. 1}
+ (E. 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$, E. 3 + dot + c. l.).
Height of 1st part = 4 spaces.
Height of 2d part = 1 space.

k = P. 5 + (loop + P. 3)
= {$\frac{1}{3}$, E. 3 + $\frac{2}{3}$, (*E.* 3 + *E.* 5 + *E.* 4) + $\frac{1}{3}$, *E.* 1}
+ E. 4 + *loop* + $\frac{1}{2}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$, E. 3).
Height of 1st part = 4 spaces.
Height of 2d part = $1\frac{1}{4}$ spaces.

p = (E. 3 + E. 1) + P. 3
= (3, E. 3 + 5, *E.* 1)
+ $\frac{3}{4}$, E. 4 + $\frac{1}{4}$, E. 5 + $\frac{1}{2}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$, E. 3).
Length of 1st part = 5 spaces.
Height of 2d part = 1 space.

q = (E. 4 + P. 4) + (E. 1 + E. 2 + E. 1 + E. 4)
= {1, E. 4 + ($\frac{3}{4}$, *E.* 4 + $\frac{1}{4}$, *E.* 2 + $\frac{1}{4}$, *E.* 3 + $\frac{1}{2}$, *E.* 1)}
+ ($3\frac{1}{4}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $2\frac{1}{4}$, E. 1 + 1, E. 4).
Height of 1st part = 1 space.
Length of 2d part = $3\frac{1}{2}$ spaces

y = P. 3 + P. 6
= $\frac{3}{4}$, E. 4 + $\frac{1}{4}$, E. 5 + $\frac{1}{2}$, *E.* 1 + $\frac{1}{4}$, E. 2 + $\frac{3}{4}$, E. 3)
+ {$\frac{1}{3}$, *E.* 1 + $\frac{2}{3}$, (*E.* 3 + *E.* 2 + *E.* 4) + $\frac{1}{3}$, E. 4}.

Height of 1st part = 1 space.
Length of 2d part = 4 spaces.

Drill on the Capitals.

With book No. 3, begin to practise frequently Ps. 7, 8, 9, on waste paper, *between two lines*, using these steps: — P. 7. (1.) Hair line and dot; (2.) The variations in Plate III. — P. 8. (1.) Simple oval, hair line, closed at top; (2.) Left curve shaded; (3.) Begin as (2), but at the top run down inside (see P. 8, p. 77, and *O*, p. 79. 1); (4.) Inner curve shaded. — P. 9. (1.) Simple oval, hair line, up left side first, begin at the bottom and close there; (2.) Right curve shaded; (3.) Write (1), beginning one third from bottom line, oval two thirds; (4.) Right curve shaded; (5.) Begin as (4), at the bottom, run up inside one third the width from the left and below the upper curve, cross the right curve, descend at same distance from it to the middle, then end with straight line on main slope; (6.) Change shade to the straight line.

Let these be written in concert, by count at first, afterwards by six at a time. Criticise each fresh batch, and insist upon the *immediate correction of errors* and upon *constant improvement.* At a later period, see how many of each different kind they can make *handsomely* in a minute, taking one kind at a time. They ought to make about seventy or eighty of Ps. 8 and 9, — more of P. 7.

LESSON VI.

ON A CAPITAL.

Topics.

1. The Principles { 1. Conformity to. 2. Deviation from.
2. Proportions { 1. On the slope. 2. On the short diameter, or across.
3. Slope { 1. General, of the whole. 2. Special, of the parts.
4. Shading.
5. Description of the letter.

Especial attention must be given to the following points. 1. The rounding of the oval. 2. Its proportions. 3. The similarity of its curves. 4. The lateral curves being all on the main slope. 5. The elegance of the stem. 6. The formation of its curves. 7. The turn and dot. 8. Its slope. 9. Its shade. 10. The shape of the other parts of the letters. 11. Their proportions. 12. The combining of the muscular movement with that of the fingers in their execution.

T. We are now going to write the letter *B*. It consists of two parts, — the Stem and the Cap and Lobes. What is the stem? C. The seventh principle or double curve terminated with a turn and dot. T. Is it the pure double curve? C. Yes. T. What did I mean by that question? C. Whether the upper and lower parts had the same curve. T Is it much curved? C. No. T. What is the

turn? C. The turn of the lower oval. T. What of the dot? C. Its height is half a space, and it is made on the main slope, Rule 2. T. Is it made on the curve of the oval? C. No, it cuts into the oval, because of its slope. T. What is the front or head of the *B*? C. The inverted oval. T. What is the rule for it? C. Rule 5. Its height is two thirds. T. How many right and left curves in it? C. Three. T. What is their slope? C. They all have the main slope. T. How many in the left side of the letter? C. Three. T. And their slope? C. All have the main slope. T. Which is the highest part of the cap? C. The middle point between the section of the oval and the stem. T. Describe the cap after the highest point. C. It descends, crosses the stem at right angles, and forms a lobe with the right curve, which passes under to form the horizontal separating loop at one third from the top, and terminates with the inverted oval, half the height, according to Rule 5. T. How long is the upper lobe? C. One third. T. How long in P? C. One half. T. Through what would a line drawn, touching the second curve of the front oval, pass? C. Through the dot. T. And a line touching the upper lobe? C. Through the middle of the inverted oval which forms the lower lobe. T. (Drawing the short diameter of the first oval through to the stem.) What equal spaces? C. Between the left sides of the oval, one; in the next section of the oval, two; between the oval and the stem, one. Four in all. T. In the same way in the lower lobe? C. Three, — one between the stem and the oval, two in the oval. T. Supposing the first oval completed, what is its width? C. Half the length. T. Which is the highest part of the letter? C. The upper curve of the first part of the oval. T. What shades are there? C. There is a shade on the right curve

in each of the two ovals. T. Where is it heaviest? C. In the middle of the curve. T. Do you see the good taste of thus placing it? C. Yes, sir; the upper balances the lower, and there are two light curves before each. T. Describe the letter as it should exist in your mind when you write it. C. The capital-stem with similar and equal curves on the main slope, turned on the lower turn of the oval from which the lower part of the stem is derived and finished with a dot or bulb, half a space high and on the main slope. The inverted oval, two thirds high and shaded on the right side, making with its curves, diameter, and the stem, four equal spaces measured on the short diameter; the curve ascends till the highest point of the cap is reached, half-way between the section of the oval and the stem; then descends, crossing the stem at right angles, and forms the upper lobe, one third high, passes under to form the small horizontal separating loop, reissues to descend and form the lower lobe, which consists of the inverted oval, half the height, and shaded on the right side, making with its curves, diameter, and the stem three equal spaces, measured on the short diameter. T. Tell me how you shall write the first oval? C. I must measure with my eye two thirds of the height and the four spaces, taking care that the slope through the point between the first and second and the dot of the stem is the main slope, then, left curve ascending, over, right curve shaded beginning below the crossing, under, left curve similar to the first, cross, and ascend to highest point of the cap. (READER. — What a long rigmarole! TEACHER. — My good friend, we pro fess to *teach* writing, and not merely to let it grow.) T. You must think of all these points as you first trace and then write the letter. Write slowly at first, with the finger movement, till your eye and hand become familiar

with the form. Then make use of the addititional muscular movement, and write it freely, boldly, and rapidly. Remember that the inverted oval occurs as a commencement in seven letters, so that in learning to make it perfectly here, you learn it for all of them.